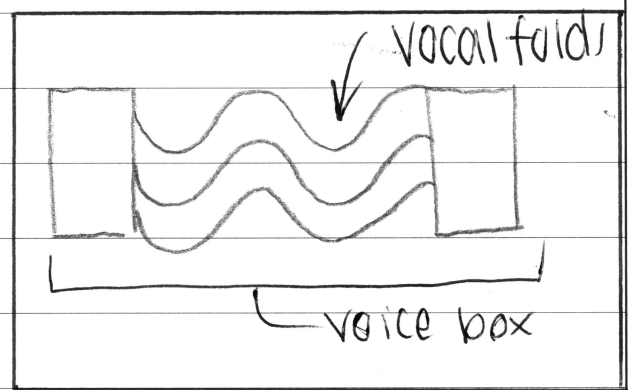
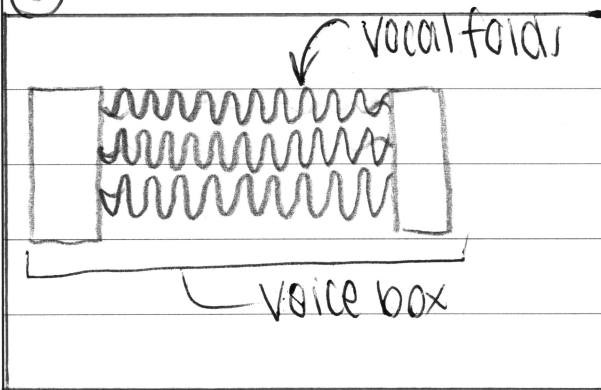


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(a)	Insects	Fish	Mammals
	structure	How	
Insect	Antenna	Sense vibrations in air, send to brain	
Fish	Blind	Sense vibrations in water, send to brain	
Mammal	Ear	acts as dish and funnel sound to brain	

↓ senses vibrations in air, via tiny hairs in ear

(b)



High Pitch Note

Low Pitch Note

(c) i) distance/angle to fovea.

ii) Cone structure varies depending on their location in the retina as the surface is curved meaning they have to pick up the light from different angles.

iii Rhodopsin plays an important role in rods as it allows the the distinguishing of movement and 'night vision'!

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(d) i Region x was not stimulated during brain testing, would mean that no action potentials would be seen in the results

Region x has been severely damaged and is not functioning and hence showing no action potentials. in the results of the brain testing

ii This condition could change the behaviour of the mammal as it means Region x is not functioning. This region in a mammal is related to ~~hearing~~ sensory organs, ~~including~~ This could mean that the mammal will not be able to hear properly or recognise sounds.

(e) our understanding of the eye, ~~the ear and~~ and ear has led to the development of many new technologies including 3D movies, 3D glasses and surround sound systems.

In order for 3D movies to work effectively two different images need to be projected onto the same screen at the same time and ~~to be seen~~ for each image to be seen by only one eye.

If we didn't know enough about how the eyes work and how messages sent from this sensory organ is interpreted by the brain this technology would not be popular if it had at all been invented. Without the knowledge that each eye views each image separately and that both are interpreted by the brain in order for the images to make sense we would have not had the information or knowledge needed to create 3D glasses in order for our eyes to view two dimensional pictures as 3 dimensional objects.

Our understanding of ~~the ear~~ has also led to many new technologies including surround sound systems. Surround sound systems are based on sound shadows and the brain's interpretation of sound. They allow sound to be produced in different areas

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of the cinema so the audience feels as though they are at the center of the action being carried out on screen. In order for this technology to work effectively we must know how the ears work and how those sounds are interpreted by the brain. Sound shadows are created when an object 'blocks' sound waves or diverts them. The brain interprets the two signals as separate and the time lapse is noted, whereupon the brain can find the direction from which the sound came. Without this knowledge of the way our ears and brain function surround sound systems would not have been invented as the information and knowledge required for them to be built would not be available or ~~in~~ the information they were built on would not have been as effective as the current information.

Our understanding of the eye and the ear has led to the development of many technologies which would have not been created if we did not have the knowledge and depth of understanding regarding these sensory organs, making our understanding of these sensory organs crucial.

You may ask for an extra Writing Booklet if you need more space.