

1. Robert ingin menjadikan salah satu bilik yang luas di dalam rumahnya sebagai bilik tayangan. Selain meletakkan sebuah televisyen berskrin lebar dan sebuah sofa, Robert juga telah menggantung beberapa lukisan cat minyak dan menukar lantai simen kepada lantai kayu keras untuk mengurangkan kesan gema. Namun, Robert masih belum berpuas hati kerana apabila filem dimainkan, beliau masih boleh mendengar gema.
- Robert wants to turn one of the large rooms in his house to become a screening room. Besides having a big screen television and a sofa, Robert also hung a few oil painted pictures on the wall and change the concrete floor to hardwood floor to reduce echoes. However, Robert is still not satisfied with the result because when the television is turned on, he can still hear the echoes.*

- (a) Takrifkan maksud gema. **TP 2**
Define echo.

Echo is a sound that is reflected when sound waves hit a [redacted] surface.

- (b) Nyatakan dua kesalahan yang dilakukan Robert dalam menghias bilik tersebut. **TP 5**
KBAT Menilai
State two Robert's mistakes when decorating the room.

- Hanging [redacted] painted drawing
- Using [redacted] flooring

- (c) Berikan alasan bagi jawapan anda di 1(b) dan bantu Robert untuk membuat perubahan. **TP 3**

Give your reasons for your answers in 1(b) and help Robert to make changes. **KBAT** Menganalisis

- Oil paintings cause sound to be [redacted]. He can exchange them with wall arts from canvas or textiles to help more sound be [redacted].
- Hardwood floor also causes sound to be [redacted]. Robert can add carpets on the floor because their soft surface [redacted] sound

- (d) Cadangkan dua cara lain untuk Robert mengubah suai bilik itu supaya beliau boleh menikmati audio yang lebih baik. **TP 3**

Suggest two other ways for Robert to modify his room so that he can enjoy a better audio.

KBAT Mengaplikasi

- Adding [redacted] to the windows or using furnitures with [redacted] surface or padded covering.
- Adding soundproof [redacted] panels to the wall to [redacted] sound more effectively.

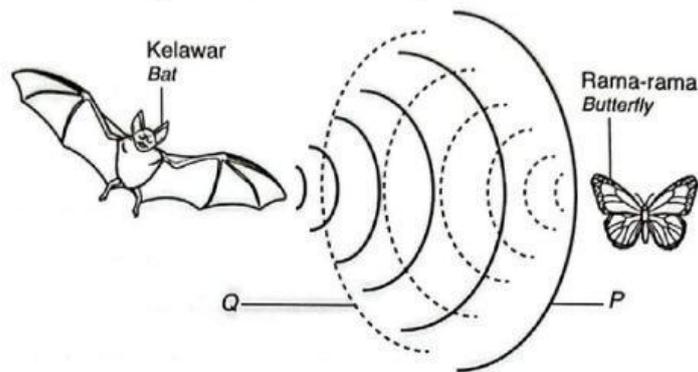
foam

curtains

soft

absorb

2. Rajah 1 menunjukkan seekor kelawar yang sedang menggunakan teknik ekolokasi.
Diagram 1 shows a bat that is using an echolocation technique.



Rajah 1 / Diagram 1

- (a) Apakah kepentingan ekolokasi bagi kelawar? (TP 2)
What is the importance of echolocation for a bat?

Echolocation allows bats to _____, avoid obstacles and hunt in pitch

such as in the _____

darkness

navigate

cave

- (b) Apakah yang diwakili oleh garisan P dan Q? (TP 2)
What are P and Q represent?

P : _____

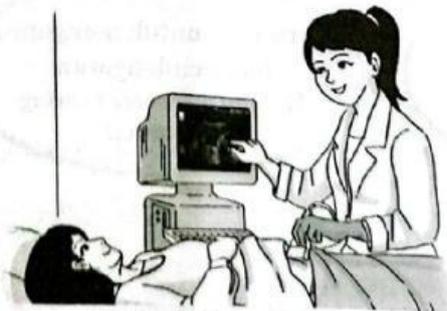
Q : _____

- (c) Ikan lumba-lumba ialah sejenis haiwan yang menggunakan teknik yang sama dengan kelawar. Selain digunakan untuk mengesan makanan, apakah kepentingan lain ekolokasi untuk ikan lumba-lumba? (TP 2)
Dolphins are another type of animal that have the same ability as the bat. Besides using it to detect food, what is another function of echolocation for dolphins?

To _____ with each other

Had Pendengaran Limitations of Hearing

3. Rajah 2 menunjukkan seorang doktor yang sedang menggunakan mesin pengimbas ultrabunyi untuk memeriksa keadaan fetus di dalam kandungan ibunya.
Diagram 2 shows a doctor who is using an ultrasound scanning machine to examine the condition of the foetus in the mother's uterus.



Rajah 2 / Diagram 2

TP2 Menguasai Belum menguasai

- (a) Bagaimanakah mesin tersebut berfungsi? **TP 3**
How does the machine function?

KBAT Mengaplikasi

The transducer produces a high frequency sound that _____ into the mother's uterus. When the ultrasound _____ hit an organ or any parts that is to be observed, the waves will be reflected. The transducer will record the reflected waves and relay it to the machine to produce an _____ on the screen.

image

waves

travels

- (b) Mengapakah manusia tidak dapat mendengar bunyi yang dihasilkan oleh transduser? **TP 3**
Why human could not hear the sound produced by the transducer?

KBAT Mengaplikasi

Human's range of _____ is between 20 Hz to 20,000 Hz, while the _____ frequency produced by transducer is higher than 20,000 Hz.

sound

hearing

4. Nyatakan sama ada pernyataan di bawah BENAR atau PALSU. **TP 2**
State whether the statements below are TRUE or FALSE.

- (a) Frekuensi bunyi di bawah 20 Hz adalah terlalu lemah untuk didengar oleh telinga kita.

A sound frequency below 20 Hz is too weak to be heard by our ears.

- (b) Mendengar bunyi bising secara kerap memberikan kesan negatif terhadap pendengaran.

Listening to loud sound frequently give negative effects on our hearing.

- (c) Gajah boleh menghasilkan bunyi yang sangat lemah, iaitu di bawah julat pendengaran manusia.

Elephants can produce a very weak sound that is below the limit of hearing for human.

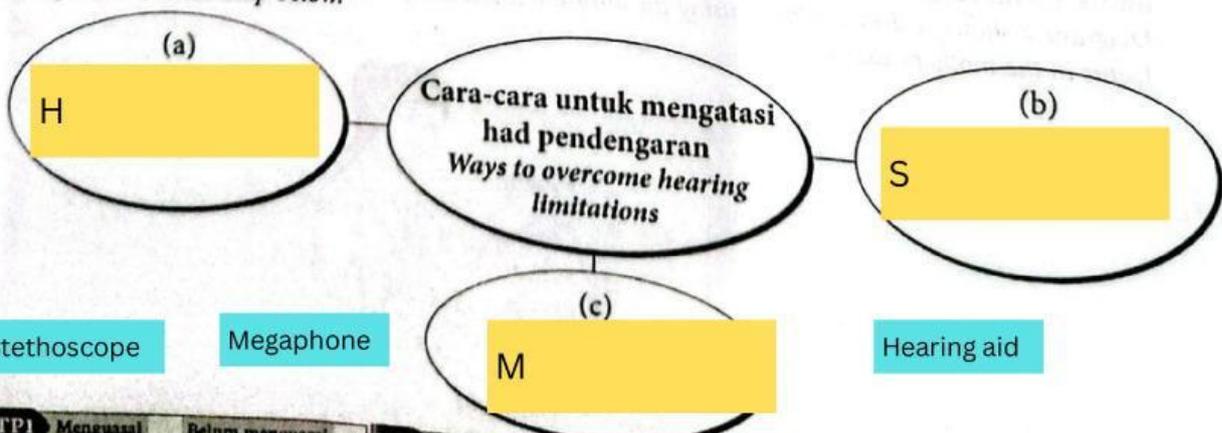
- (d) Julat pendengaran kelawar ialah 2 000 hingga 20 000 Hz.

A bat's limit of hearing is between 2 000 to 20 000 Hz.

- (e) Julat pendengaran manusia boleh berkurang disebabkan penuaan.

A human limit of hearing can decrease due to aging.

5. Lengkapkan peta minda di bawah. **TP 1**
Complete the mind map below.



Stethoscope

Megaphone

Hearing aid