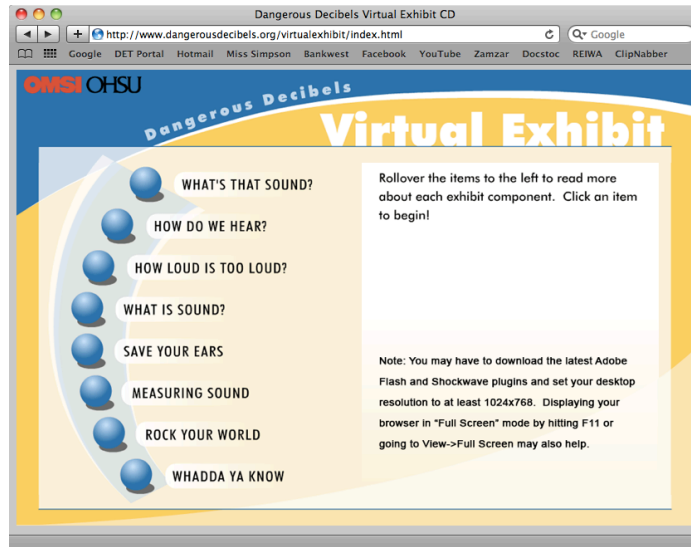


Dangerous Decibels

This website is designed to help you gain a better understanding of sound and sound waves. You need to complete the series of activities outlined below and answer any questions on this sheet. Have fun!

Go to the website: <http://www.dangerousdecibels.org/virtualexhibit/index.html> or if this fails to load go to www.google.com and in the question toolbox type "dangerous decibels virtual exhibit" and select the 1st website from the list generated for you. The website homepage should look like the picture below.



1. From this page click on the first blue ball "What's that sound?" _____

2. How does permanent hearing loss happen? _____

3. What is tinnitus? _____

Click the arrow at the bottom of the screen that says "continue". Adjust the sound and play the game designed to simulate hearing loss.

When you have done this, click the arrow at the top of the screen that says "Return to Virtual Exhibit Index". Click on the 2nd blue ball that says "How do we hear?".

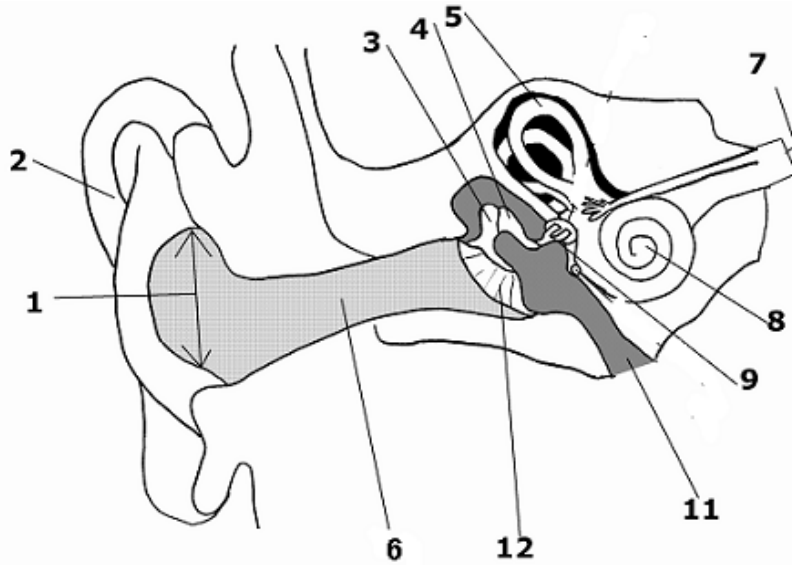
What is the inner ear shaped like? _____

Complete this sentence:

Inside the _____, there are thousands of tiny _____ cells. Hair cells change the _____ into _____ signals that are sent to the _____ through the hearing _____.

Click on the link titled "Take a look inside your ear".

On the diagram on the next page, label the important features of the ear.



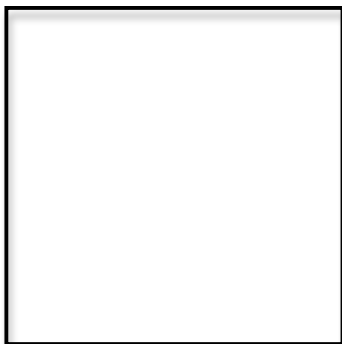
Click on the back button on the top of your window to get you back to the previous page.

4. If a hair cell dies, can it grow back? _____

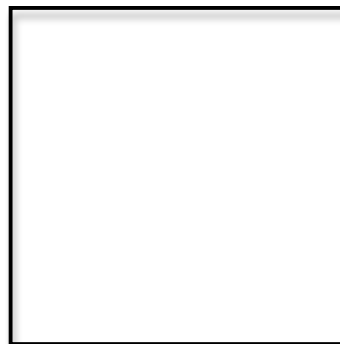
5. What type of hair cells are most easily damaged? _____

6. Give 2 examples of the types of sounds people have trouble hearing when they are suffering hearing loss. _____

In the boxes below, draw a quick diagram comparing normal ear hair cells with damaged ones.



Normal hair cells



Damaged hair cells

Scroll to the top of the screen and click "Return to Virtual Exhibit Index". Click on the 3rd blue ball "How Loud is Too Loud".

7. What unit of measure do we use to measure sound? _____

8. How long would you have to listen to an 85dB sound for to cause hearing damage? _____

9. How many dB can instantly cause damage? _____

Press the start button to play the game. As you play, answer the following questions:

10. How much sound does a jackhammer produce? _____

11. How much sound does a vacuum cleaner produce? _____

12. How long could you listen to a chainsaw before you could damage your hearing? _____

13. How much sound does a jet engine produce? _____

14. How much sound does a gunshot produce? _____

Scroll to the top of the screen and click "Return to Virtual Exhibit Index". Select the 4th blue ball "What is sound?"

Complete this sentence:

Sound starts as a _____. Something has to _____ for sound to exist. For instance, you can ring a bell, clap your hands, or pluck guitar strings to produce _____ that cause sound waves. _____ travel in sound _____ from one place to another through the _____.

Scroll to the top of the screen and click "Return to Virtual Exhibit Index". Select the 6th blue ball "Measuring Sound".

15. Sound energy travels in waves and is measured in frequency and _____

16. What does amplitude measure? _____

17. How many decibels (dBA) are normal speaking voices? _____

18. Frequency is measured in the number of sound vibrations in what time measurement? _____

Scroll to the top of the screen and click "Return to Virtual Exhibit Index". Select the 7th blue ball "Rock Your World" and play the game there.

19. What was your yearbook title at the end of the game? _____

Scroll to the top of the screen and click "Return to Virtual Exhibit Index". Click on the last blue ball (8th) "Whadda Ya Know".

What was your final score? _____

END OF WEBQUEST