WORKSHEET

Worksheet No

Unit No/Name	Subject Name	Teacher Name	Date
Waves, sound and light	**Sound Waves Properties 2.3 & 2.4**	**Ayman Al Omari**	

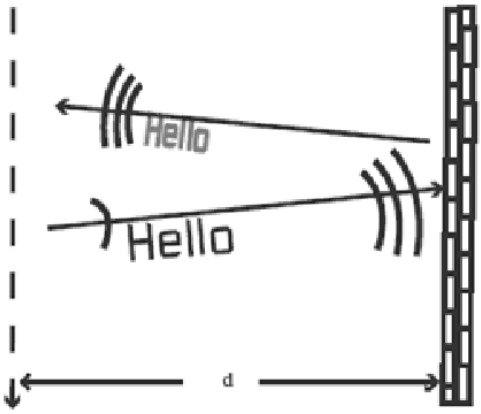
Student No:		Student Name:		Group:	VEDC+

Echo

What is sound echo?

Echo is a reflection of sound wave on a surface such as a wall.

In the figure, the sound has travelled to the wall and come back again.



How much is the echo time?

$$speed\ of\ sound = \frac{total\ distance}{echo\ time}$$

$$speed\ of\ sound = \frac{2\ \times distance\ to\ wall}{echo\ time}$$

$$echo\ time = \frac{2\ \times distance\ to\ wall}{speed\ of\ sound}$$

Example:-

You hear your sound echo from a wall distance of 680 m.
The sound speed is 340 m/s. Calculate the echo time (the time you will need to hear your sound reflection).

$$echo\ time = \frac{2\ \times distance\ to\ wall}{speed\ of\ sound}$$

$$echo\ time = \frac{2\ \times 680}{340} = 4\ s$$

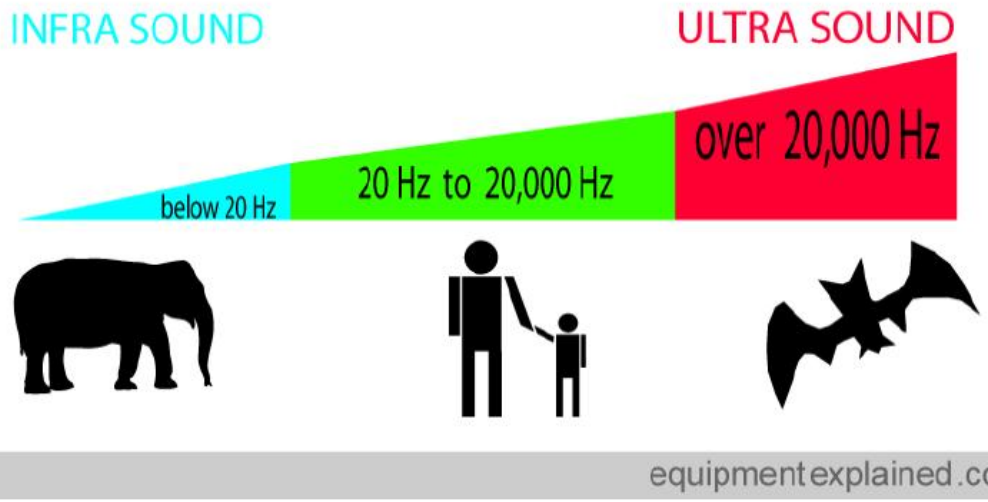
WORKSHEET

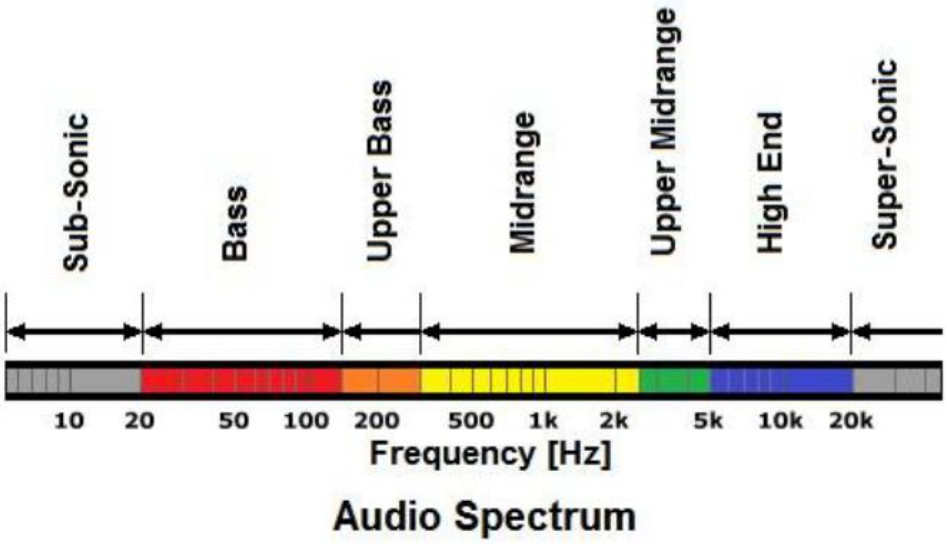
Worksheet No

Unit No/Name	Subject Name	Teacher Name	Date
Waves, sound and light	**Sound Waves Properties 2.3 & 2.4**	**Ayman Al Omari**	

Student No:		Student Name:		Group:	VEDC+

Sound frequencies range:- infra sound, heard, and ultra sound frequencies.





Audio Spectrum

- Sound with frequencies less than 20 Hz as **Infra sound**
- Humans hear frequencies higher than **20 Hz** and up to **20000 Hz (20**
- Sound with frequencies higher than 20 kHz up to about 100 kHz as **Ultra sound**