

# Sound As A Tool For Making Your VR Experience More Immersive



# Outline

## Sound As A Tool For Creating Immersion In VR

01 | About Me

02 | What Is Sound?

03 | How Is Sound Useful In VR

04 | How Do We Use Sound In VR?

05 | General Guidance For Using Sound In VR

06 | Audio Effects, Audio Mixer & Audio Format In Unity

07 | Additional Resources



# About Me



## About Me

I'm Jehoshaphat I. Abu a polymath and an advocate of STEAM education.

I'm studied Computer Science (also Music) with Specialization in Artificial Intelligence and Machine Learning.

I'm also a multi-disciplinary artist, designing sounds and composing music for Film, Games & TV, interactive installation and performances.



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# Jehoshaphat I. Abu

Sound Designer | Developer | Digital Artist | Researcher in AI, Machine Learning, Computer Music.



# Most Powerful thing in all Form of media

➤ Film

➤ TV

➤ Games

➤ Music e.t.c



# What Is Sound?



Vibrations that travel through the air or another medium and can be heard when they reach a person's or animal's ear.



# Elements Of Sound Perception

- Pitch – Low Or High
- Duration – Long Or Short
- Loudness – Loud Or Soft
- Timbre – Distinct Sound. Qlty
- Noise – Unwanted Sound
- Spatial Location





# Pitch – Low Or High

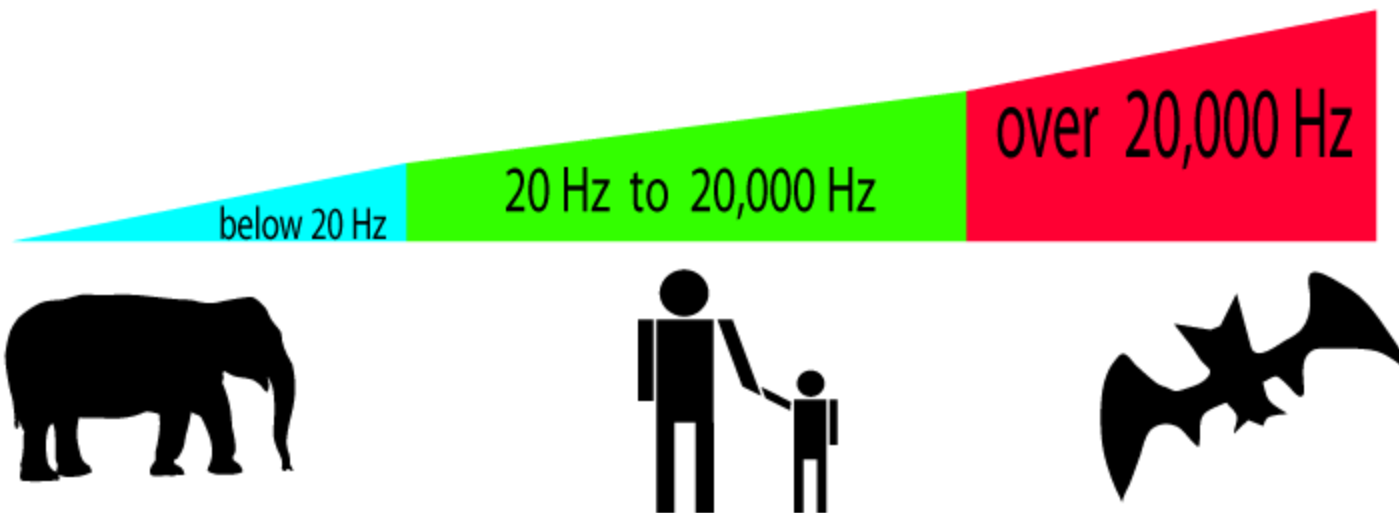
Is the frequency of a sound as perceived by human ear



# Pitch – Low Or High

INFRA SOUND

ULTRA SOUND



how equipment works .com

<https://www.bing.com/images/search?view=detailV2&ccid=wYHOAdlH&id=CF86509D7CDE9DF28ACC2A4870BEA44451141DF3&thid=OIP.wYHOAdlHqMn4gvSl0eNomwEsCl&q=sound+spectrum&simid=608052098345076933&selectedIndex=52&ajaxhist=0>



# Timbre – Quality

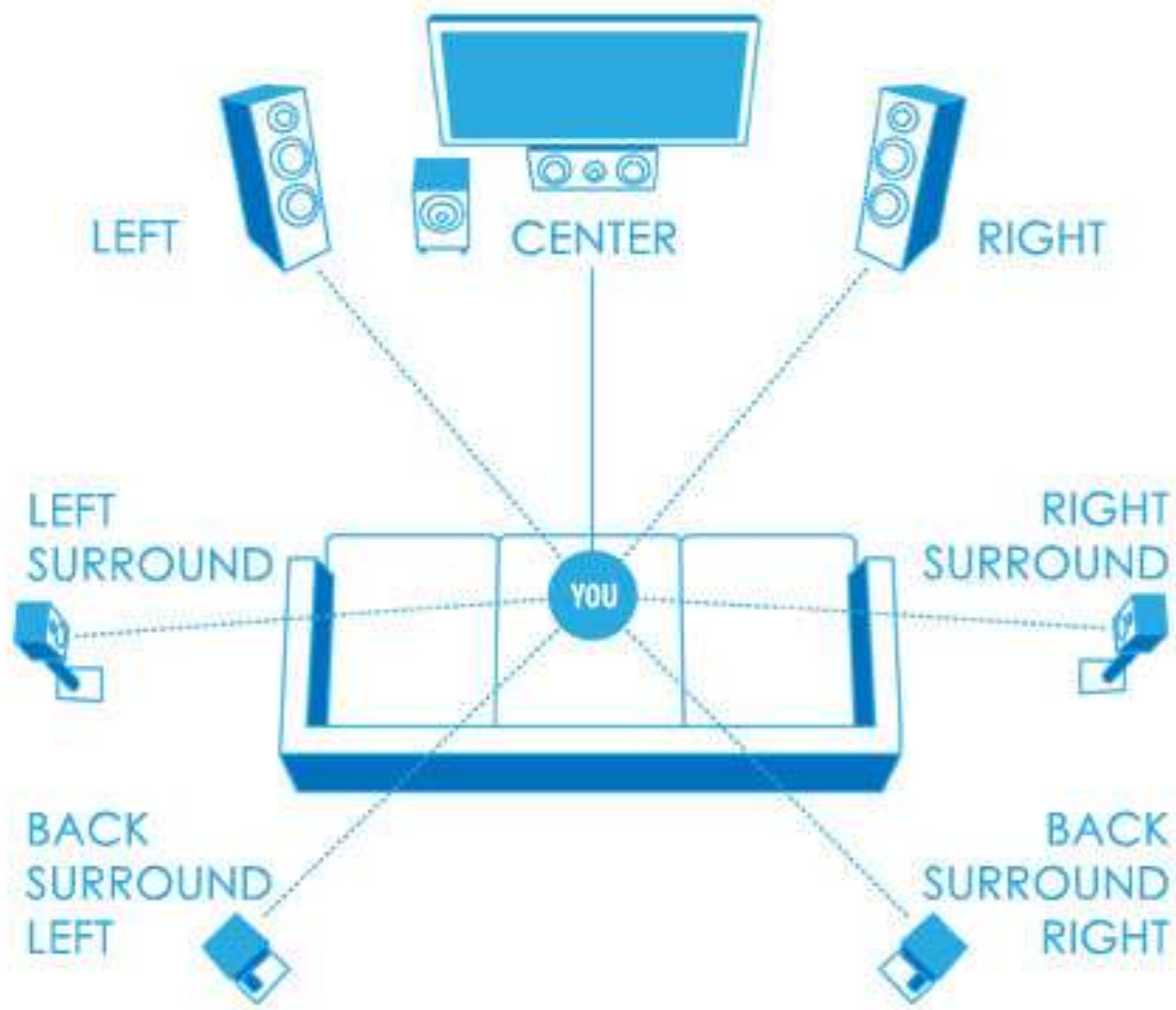


# Spatial Location

is a listener's ability to identify the location or origin of a detected sound in direction and distance.



# Spatial Location



# NOTE

Think about sound and how  
You want to use it in enhancing  
Your VR experience right from day  
One, as you think about other assets  
In your pipeline



# How Is Sound Useful In VR?



➤ Use sound to change how users perceive the size of an object







➤ Use sound too create the Illusion of place





➤ Use Sound to invoke feelings in your user





# NOTE

Bad sound can make a very great VR experience terrible. Likewise, a really good sound can make a bad experience great.



# How Do We Use Sound In VR?



- Sound Effects (Button Press)
- Ambient Sound( Environment)
- Speech (Character Personality)
- Music (Part and !Part of )





# General Guidance For Using Sound In VR



- Sound effects should be short and uncompressed(Faster to Process)
- Ambient should be prepared as loops(Crossfade before importing)
- Speech should be recorded with high quality and should not be compressed



# Audio FX, Audio Mixer & Audio Format



# Audio Effects

- Pitch Shift
- Reverb
- Equalization
- Echo
- Delay
- Phasing & Flanging
- Chorus



# Audio Mixer

- Use mixer to create mix for your sounds
- Use mixer for sound grouping



# Audio Format

- AIFF and WAV (Uncompressed)
- MP3 and ORG (Compressed)

Try your best not to use compressed sound in your VR experiences. They are baaaaaaaaaaaaaad



# Additional Resources



1. <https://docs.unity3d.com/Manual/Audio.html> Reverb
2. <https://www.gameaudio101.com/>
3. <https://en.wikipedia.org/wiki/Sound>





# Questions?



THANK YOU

