Understand the principles of auscultation and practice it under supervision.

Use a stethoscope

Work as part of a team to discern normal heart sounds

Give your UCAS form and medical school interviews a winning edge
This is the bell; it is normally pressed lightly against the patient and used to pick up lower frequency sounds such as heart murmurs and bowel sounds.

This is the diaphragm; it’s the most commonly used part of the stethoscope. The diaphragm is good at picking up high frequency sounds such as normal breathing sounds and S₁ and S₂ heart sounds.
You should hold the chest piece between the distal part of your index and middle fingers. This allows a gentle touch and prevents rubbing, which causes additional noise.
When the two ventricles contract blood attempts to flow back into the atriums. This causes the atrioventricular valves to slam shut which makes the $S_1$, or “lub” sound.

As the ventricles contract the semilunar valves open to let blood head to either the lungs to be oxygenated or to the rest of the body. As the ventricles relax blood tries to flow back into them causing the semilunar valves to slam shut which makes the $S_2$, or “dub” sound.
Abnormal heart sounds

The S₃ heart sound, also known as the ventricular gallop, is caused when the left ventricle is overly compliant. This results in blood oscillating between the walls of the ventricle causing the walls to reverberate and produce the extra sound. This isn’t considered abnormal in many children, pregnant women and athletes.

The S₄ heart sound, also known as the presystolic gallop, occurs if the left ventricle is non-compliant when the left atrium contracts. This causes tension in the left ventricle which produces the S₄ sound.

Heart murmurs are when the flow of blood itself through the heart is audible; this can be harmless. One of the most common causes of abnormal heart murmurs is stenosis (the narrowing of a passageway).

Aortic stenosis
Mitral stenosis
Auscultation

This is the aortic listening point. Here it is easy to hear $S_2$ sounds with as well as aortic valve murmurs such as those caused by aortic stenosis.

This is the tricuspid listening point. Here you can best hear $S_1$ as well as heart murmurs caused by the tricuspid valve.

This is the pulmonic listening point. Here you can best hear $S_1$ as well as any heart murmurs caused by the pulmonary valve.

This is the mitral listening point, which means it’s easy to hear $S_2$ sounds here too. You can also hear murmurs from the mitral valve, such as those caused by mitral stenosis as well as $S_3$ and $S_4$ sounds with the bell.
The most commonly heard breathing sounds are known as vesicular breath sounds. These can be heard over most of the lungs surfaces.

Bronchial breath sounds are also considered normal breathing sounds. These are hollow, tubular sounds and come from the trachea.
Crackles can be heard when there is fluid in small airways in the lungs. The sound is caused by the small airways and alveoli, that have collapsed due to the liquid, “popping open”.

Wheezing can be heard when there are obstructions within the airways. The smaller airways mean air is forced through them at greater speeds, producing the wheezing sound.
Diagnosis can be broken down into two steps:

• The first step is any activities undergone in order to find out what’s wrong. Auscultation fits into this step.
• The second step is naming the disease.

Prognosis is the likely outcome of a diagnosis. It’s possible for two patients to have the same diagnosis but different prognoses due to factors unrelated to the diagnosis such as age and other health factors. There are essentially three different types of prognosis:

• The condition can be cured and the patient is likely to live the rest of their life unaffected.
• The condition can’t be cured, however it is manageable and the patient is likely to continue living.
• The condition is terminal.
Lung sounds
The lungs and airways require different listening skills from those used to detect heart sounds. The stethoscope must be placed over the chest, and the person being examined must breathe in and out deeply and slowly. Using the bell, the listener should note different sounds in various areas of the chest. Then, the diaphragm should be used in the same way. There will be no wheezes or crackles in normal lung sounds.

Crackles or wheezes are abnormal lung sounds. When the lung rubs against the chest wall, it creates friction and a rubbing sound. When there is fluid in the lungs, crackles are heard. A high-pitched whistling sound called a wheeze is often heard when the airways are constricted.
Diagnosis and aetiology

When listening to the heart, one must listen to the left side of the chest, where the heart is located. Specifically, the heart lies between the fourth and sixth ribs, almost directly below the breast. The stethoscope must be moved around. A health care provider should listen for different sounds coming from different locations. The bell (one side of the head) of the instrument is generally used for listening to low-pitched sounds. The diaphragm (the other side of the head) of the instrument is used to listen to different areas of the heart. The sounds from each area will be different. “lub-dub” is the sound produced by the normal heart as it beats. Every time this sound is detected, it means that the heart is contracting once. The noises are created when the heart valves click to close. When one hears "lub," the atrioventricular valves are closing. The "dub" sound is produced by the pulmonic and aortic valves. Other heart sounds, such as a quiet "whoosh," are produced by "murmurs." These sounds are produced when there are irregularities in the path of blood flow through the heart. The sounds reflect turbulence in normal blood flow. If a valve remains closed rather than opening completely, turbulence is created and a murmur is produced. Murmurs are not uncommon; many people have them and are unaffected. They are frequently too faint to be heard and remain undetected.
https://www.youtube.com/watch?v=J8E6SrRhBSs
Qualities of Sound

**Quality:** This distinguishes two sounds of similar frequency and intensity, eg. lung from heart sounds.

**Duration:** The length of time a sound lasts. For example, normal $S_1$ and $S_2$ sounds tend to be short, while murmurs are long. The human ear can only distinguish sounds >0.02 seconds apart.

Normal $S_1$ and $S_2$ sounds  
Murmur
Qualities of Sound

**Frequency**: The number of waves generated per second.

**Intensity**: The loudness or softness of sound. This is determined by the amplitude of the wave.