

Lesson One – Introduction to Auscultation

Lesson Overview

In this lesson, students will learn and practice auscultating the respiratory, cardiac, and abdominal systems.

Lesson Objectives

After completing this lesson, participants will be able to:

- Identify auscultation sites for heart, lungs, and abdomen
- Demonstrate the correct pattern for auscultation
- Recognize abnormal cardiac, respiratory, and abdominal sounds

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS: Part One	• <i>Anatomy Pre-Quiz</i> • <i>Anatomy Pre-Quiz – Answer Key</i>	1. Print/photocopy <i>Anatomy Pre-Quiz</i> (one per participant).	10 minutes
FOCUS: Part Two	• <i>Empathy Activity</i> • <i>Empathy Activity – Answer Key</i>	1. Print/photocopy <i>Empathy Activity</i> (one per participant).	10 minutes
LEARN	• <i>Auscultation Trainer</i> slide presentation	1. Prepare <i>Auscultation Trainer</i> slide presentation for viewing.	20 minutes
REVIEW	• Auscultation Trainer stethoscope • Auscultation Trainer • <i>Auscultation Check-Off</i> (instructor resource) • <i>Auscultation Check-Off</i> • <i>Auscultation Quiz</i> • <i>Auscultation Quiz – Answer Key</i>	1. Print/photocopy <i>Auscultation Check-Off</i> and the <i>Auscultation Quiz</i> (one per participant). 2. Get the supplies ready for the lesson. 3. Set up Auscultation Trainer.	30 minutes

Lesson One – Introduction to Auscultation

FOCUS: Part One – Anatomy Pre-Quiz

10 minutes

Purpose:

Participants will learn common anatomical landmarks of the respiratory, cardiac, and abdominal systems.

Materials:

- *Anatomy Pre-Quiz*
- *Anatomy Pre-Quiz – Answer Key*

Facilitation Steps:

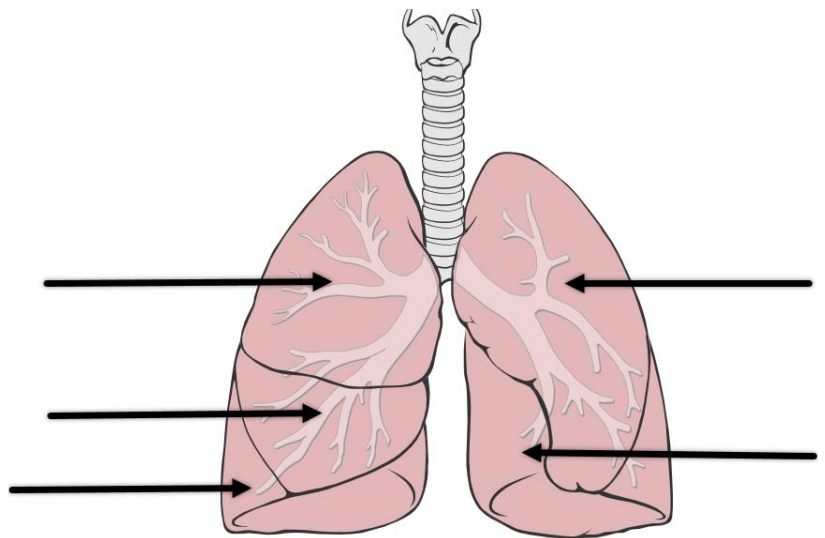
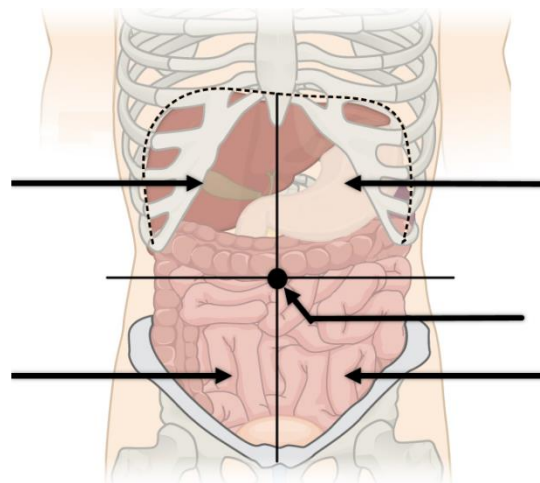
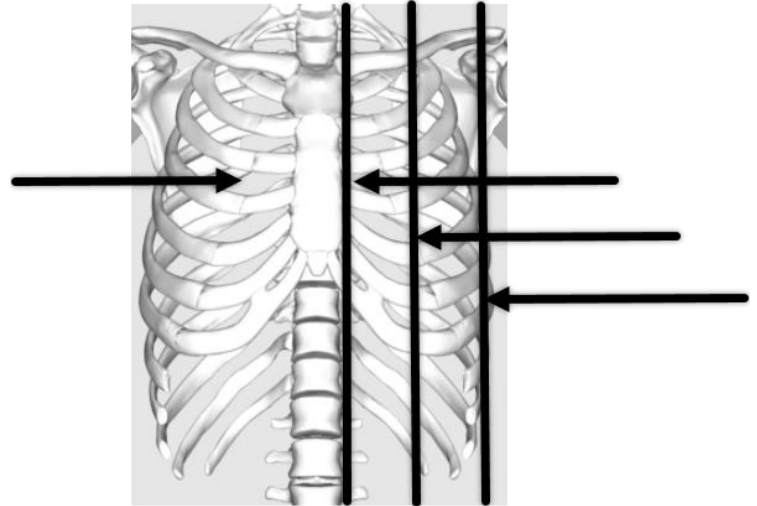
1. Distribute the *Anatomy Pre-Quiz* prior to or at the start of the class.
2. Have the *Anatomy Pre-Quiz – Answer Key* available for instructor reference.
3. Have participants complete the Pre-Quiz.
4. After completion, participants may pair up and compare answers. The instructor may review the answers.

Name: _____ Class: _____

Anatomy Pre-Quiz

Number the diagrams below with the correct anatomical landmark term.

1. Left Lower Quadrant
2. Umbilicus
3. Anterior Axillary Line
4. Right Upper Quadrant
5. Right Upper Lobe
6. Intercostal Space
7. Left Upper Lobe
8. Right Lower Quadrant
9. Sternal Border
10. Right Middle Lobe
11. Left Upper Quadrant
12. Midclavicular Line
13. Right Lower Lobe
14. Left Lower Lobe



Modified from Anatomography (2013). File:Triceps_brachii_muscle10 [Illustration]. *Wikimedia Commons*.
https://commons.wikimedia.org/wiki/File:Triceps_brachii_muscle10.png

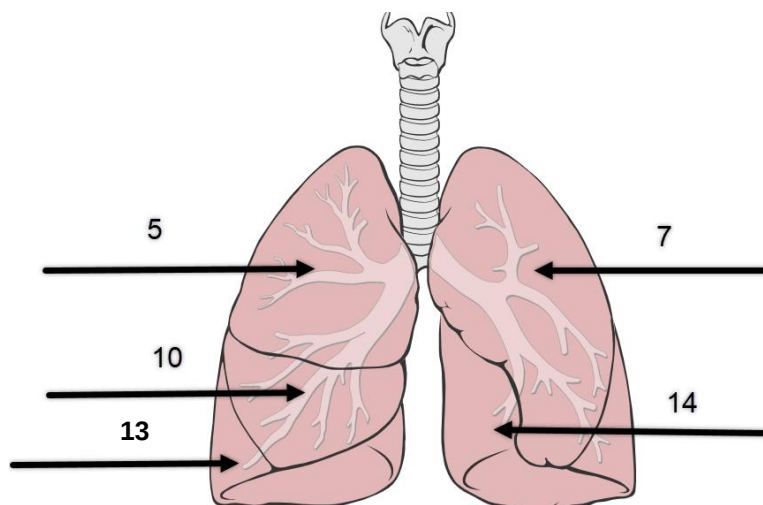
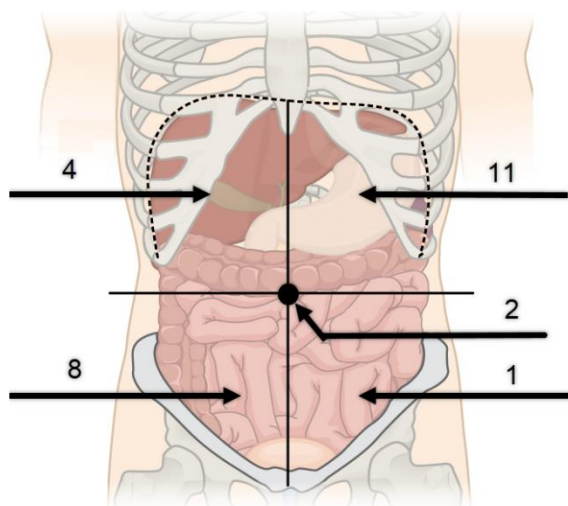
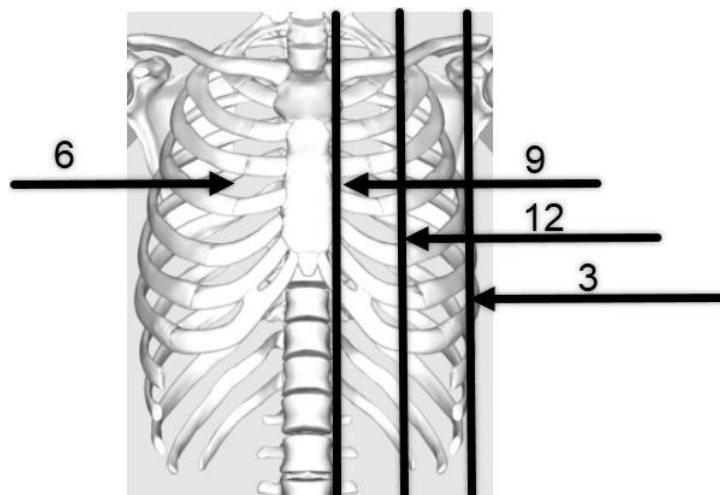
Modified from Jmarchn (2015). File:Abdominal_Quadrant_Regions_Cleaned [Illustration]. *Wikimedia Commons*.
https://commons.wikimedia.org/wiki/File:Abdominal_Quadrant_Regions_Cleaned.png

Modified from Lynch, P. (2006 File:Lungs_diagram_simple [Illustration]. *Wikimedia Commons*.
https://commons.wikimedia.org/wiki/File:Lungs_diagram_simple.svg

Anatomy Pre-Quiz – Answer Key

Number the diagrams below with the correct anatomical landmark term.

1. Left Lower Quadrant
2. Umbilicus
3. Anterior Axillary Line
4. Right Upper Quadrant
5. Right Upper Lobe
6. Intercostal Space
7. Left Upper Lobe
8. Right Lower Quadrant
9. Sternal Border
10. Right Middle Lobe
11. Left Upper Quadrant
12. Midclavicular Line
13. Right Lower Lobe
14. Left Lower Lobe



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Lesson One – Introduction to Auscultation

FOCUS: Part Two – Empathy Activity

10 minutes

Purpose:

Participants will reflect on ways to show privacy and dignity in healthcare.

Materials:

- *Empathy Activity*
- *Empathy Activity – Answer Key*

Facilitation Steps:

1. Distribute the *Empathy Activity* prior to or at the start of the class.
2. Have the *Empathy Activity – Answer Key* available for instructor reference.
3. Have participants complete the *Empathy Activity*.
4. After completion, participants may pair up and compare answers. The instructor may review the answers.

Name: _____ Class: _____

Empathy Activity

Dignity and privacy are essential in physical assessment. Reflect on a time you were assessed in a healthcare environment.

1. How was the privacy of your health concerns maintained?
2. How was the privacy of your body maintained?
3. How did the healthcare professional treat you with dignity?

*Responses may differ.

Empathy Activity – Answer Key

Dignity and privacy are essential in physical assessments. Reflect on a time you were assessed in a healthcare environment.

1. How was the privacy of your health concerns maintained?

Possible answers include:

- The staff advised me of the Health Insurance Portability and Accountability Act (HIPAA)
- The staff gave me a notice of the facility's privacy practices
- The staff asked who I wanted information shared with
- The staff recorded the answers to questions on a secure computer

2. How was the privacy of your body maintained?

Possible answers may include:

- Door was shut
- Curtain drawn
- Parts of body not being examined was covered

3. How did the healthcare provider treat you with dignity?

Possible answers include:

- Healthcare provider listened
- Healthcare provider explained the procedure
- Healthcare provider made eye contact or showed care
- Healthcare provider was respectful

*Responses may differ.

Lesson One – Introduction to Auscultation

LEARN: Auscultation Slide Presentation

30 minutes

Purpose:

Participants will learn the processes and procedures involved in auscultation, including what landmarks and sounds to utilize and listen for.

Materials:

1. *Auscultation Trainer* slide presentation

Facilitation Steps: Share the following information with participants as you show the PowerPoint presentation.

Slide 1: Introduction slide.

Slide 2: At the end of this lecture, you should be able to:

- Identify auscultation sites for heart, lungs, and abdomen
- Demonstrate the correct pattern for auscultation
- Recognize abnormal cardiac, respiratory, and abdominal sounds

Note: Techniques can vary by source and patient situation.

Slide 3: Auscultation is the act of listening to internal organs such as the heart, lungs, and gastrointestinal tract. As an assessment technique, it is usually completed with inspection, palpation, and percussion.

Slide 4: Before beginning your assessment, gather the supplies needed.

Knock, enter the room, and provide for privacy.

Identify yourself by name and title. Wash your hands with sanitizer or soap and water.

Identify the patient by asking their name and date of birth. Verify this information. Explain the assessment procedure to the patient and ask if they have any questions. Sanitize the stethoscope.

Complete the assessment from head to toe.

Slide 5: Placing the patient in a supine position, locate the cardiac landmarks: aortic, pulmonic, Erb's point, tricuspid, and mitral.

Slide 6: Using the diaphragm of the stethoscope, start at the aortic landmark. Listen for one to two cardiac cycles (lub-dub, lub-dub). Identify normal cardiac sounds and listen for any abnormal sounds. Begin with the aortic, then pulmonic, Erb's point, tricuspid, and mitral.

Note: The auscultation trainer only uses the diaphragm. Instruct participants to listen with the bell of the stethoscope at all sites on real patients.

Slide 7: When listening, you may notice a slow or fast rate of beats. Bradycardia is a rate of less than 50 beats per minute. Tachycardia is a rate of over 100 beats per minute.

Slide 8: You may also hear abnormal sounds. A systolic click is a high-pitched snap sound associated with mitral valve prolapse. S3 is a low-pitched, soft sound after S2 ("dub"). S4 is a low-pitched, soft sound heard before S1 ("lub"). A cardiac friction rub is a high-pitched scratchy sound caused by inflammation of the pericardium. A systolic murmur is a crescendo-decrescendo blowing sound between S1 and S2, while a diastolic murmur is a crescendo-decrescendo blowing sound between S2 and S1.

Slide 9: For the respiratory assessment, have the patient in a seated position. There are landmarks on the anterior and posterior sides. Note that the landmarks are not over large areas of bone such as the sternum and scapula. The landmarks represent spots that can be listened to, yet keeping your patient in mind is important. Patients with respiratory difficulties may have distress if asked to breathe too many times.

Slide 10: In respiratory auscultation, you are comparing lobes right to left (or left to right). For example, listen to the right upper lobe and compare it to the left upper lobe. The landmarks represent spots that can be listened to, yet keeping your patient in mind is important. Place the diaphragm of the stethoscope over a landmark and ask the patient to take a deep breath in and out through the mouth.

Slide 11: When listening, you may notice a slow or fast rate of breaths. Bradypnea is slow breathing at a rate of less than ten breaths per minute. Tachypnea is rapid, shallow breathing at a rate of 24 breaths per minute.

Slide 12: You may also hear abnormal sounds called adventitious sounds. Wheezes are high or low-pitched squeaking sounds caused by narrowed airways. Pleural friction rubs are a low-pitched, coarse, grating sound caused by pleuritis. Stridor is a high-pitched, crowing sound on inspiration caused by croup. Fine crackles are high-pitched, short crackling sounds, and coarse crackles are low-pitched, loud bubbling and gurgling sounds caused by secretions in the lungs.

Slide 13: For auscultating the abdomen, have the patient lay supine. Theoretically, divide the abdomen into four quadrants at the umbilicus: right upper, right lower, left upper, and left lower.

Slide 14: For abdominal auscultation, follow the large intestine around starting in the right lower quadrant. You may listen in more than one spot and listen for up to 5 minutes. If no gurgling sounds are present after 5 minutes, the bowel sounds are absent.

Slide 15: You may hear abnormal rates of sounds. Hyperactive bowel sounds are high pitched rushing sounds at over 30 times per minute that indicate increased motility. Hypoactive bowel sounds are diminished, soft sounds at under five times per minute that indicate decreased motility.

There are no abnormal sounds like in cardiac and respiratory auscultation.

Slide 16: To end the assessment, make sure the patient is comfortable and safe. Wash your hands and sanitize your stethoscope. Document the assessment.

Slide 17: Documentation can be via note or computer charting. Note what was heard, normal and abnormal, as well as the rate.

Slide 18: Closing slide.

Lesson One – Introduction to Auscultation

REVIEW: Auscultation Activity

30 minutes

Purpose:

Participants will practice auscultation of the respiratory, cardiac, and abdominal systems. Administer a quiz to assess mastery.

Materials:

- Auscultation Trainer stethoscope
- Auscultation Trainer
- *Auscultation Check-Off (Instructor Resource)*
- *Auscultation Check-Off*
- *Auscultation Quiz*
- *Auscultation Quiz – Answer Key*

Facilitation Steps:

1. Give participants the *Auscultation Check-Off*.
2. Access the *Auscultation Check-Off (Instructor Resource)* page. Following the steps on the check-off page, demonstrate auscultation on the simulator.
3. Answer any questions participants may have on using the Auscultation Trainer.
4. Following the steps on their *Auscultation Check-Off* participant resource page, have participants practice auscultation on the simulator.
5. Hand out the *Auscultation Quiz* to participants. Give them a couple of minutes to complete it.
6. Have participants self-check or peer check their answers as you share them from the *Answer Key*.

Name: _____ Class: _____

Introduction to Auscultation Check-Off

Instructor Resource

PREPARATION:

Supplies:

- Auscultation trainer
- Auscultation stethoscope

After a demonstration, have participants practice auscultation on the simulator using the following steps:

Optional: Evaluate the participant's ability to complete auscultation using the following steps. You may score via points or by marking as satisfactory/unsatisfactory.

1.	Gather supplies needed.	
2.	Knock, enter the room, and provide for privacy.	
3.	Identify yourself by name and title.	
4.	Wash your hands with sanitizer or soap and water.	
5.	Identify the patient by asking their name and date of birth. Verify this information.	
6.	Explain the assessment procedure to the patient and ask if they have any questions.	
7.	Sanitize the stethoscope.	
Cardiac Auscultation		
8.	State that you are placing the patient in an appropriate position and stand in front of the patient.	
9.	Locate the aortic landmark (right sternal border, second intercostal space) and listen with the diaphragm of the stethoscope.	
10.	Assess for normal and abnormal sounds.	
11.	Locate the pulmonic landmark (left sternal border, second intercostal space) and listen with a stethoscope.	
12.	Assess for normal and abnormal sounds.	
13.	Locate Erb's Point landmark (left sternal border, third intercostal space) and listen with a stethoscope.	
14.	Assess for normal and abnormal sounds.	
15.	Locate tricuspid landmark (left sternal border, fourth/fifth intercostal space) and listen with a stethoscope.	
16.	Assess for normal and abnormal sounds.	
17.	Locate the mitral landmark (left midclavicular line, fifth intercostal space) and listen with a stethoscope.	

18.	Assess for normal and abnormal sounds.	
Respiratory Auscultation		
19.	State that you are placing the patient in an appropriate position and stand behind the patient.	
20.	Listen to posterior upper lobes, starting at C7 and moving right to left (or left to right) down to T3.	
21.	Assess for normal and abnormal sounds. Listen for one respiration per location.	
22.	Listen to posterior lower lobes, starting at T3 and moving right to left (or left to right) down to T10.	
23.	Assess for normal and abnormal sounds. Listen for one respiration per location.	
24.	Listen to the posterior lower lobes on the posterior axillary line, moving right to left (or left to right) to T8-T10.	
25.	Assess for normal and abnormal sounds. Listen for one respiration per location.	
26.	State that you are placing the patient in an appropriate position and stand in front of the patient.	
27.	Listen to anterior upper lobes, starting above the clavicle and moving right to left (or left to right) down to the sixth rib on the anterior axillary line.	
28.	Assess for normal and abnormal sounds. Listen for one respiration per location.	
Abdominal Auscultation		
29.	State that you are placing the patient in an appropriate position and stand in front of the patient.	
30.	Listen to the right lower quadrant.	
31.	Assess for normal and abnormal sounds.	
32.	Listen to the right upper quadrant.	
33.	Assess for normal and abnormal sounds.	
34.	Listen to the left upper quadrant.	
35.	Assess for normal and abnormal sounds.	
36.	Listen to the left lower quadrant.	
37.	Assess for normal and abnormal sounds.	
38.	Provide for patient comfort and safety.	
39.	Wash hands and sanitize stethoscope.	
40.	Document assessment.	

Introduction to Auscultation Check-Off

Practice auscultation on the simulator using the following steps:

1.	Gather supplies needed.
2.	Knock, enter the room, and provide for privacy.
3.	Identify yourself by name and title.
4.	Wash your hands with sanitizer or soap and water.
5.	Identify the patient by asking their name and date of birth. Verify this information.
6.	Explain the assessment procedure to the patient and ask if they have any questions.
7.	Sanitize the stethoscope.
Cardiac Auscultation	
8.	State that you are placing the patient in an appropriate position and stand in front of the patient.
9.	Locate the aortic landmark (right sternal border, second intercostal space) and listen with the diaphragm of the stethoscope.
10.	Assess for normal and abnormal sounds.
11.	Locate the pulmonic landmark (left sternal border, second intercostal space) and listen with a stethoscope.
12.	Assess for normal and abnormal sounds.
13.	Locate Erb's Point landmark (left sternal border, third intercostal space) and listen with a stethoscope.
14.	Assess for normal and abnormal sounds.
15.	Locate tricuspid landmark (left sternal border, fourth/fifth intercostal space) and listen with a stethoscope.
16.	Assess for normal and abnormal sounds.
17.	Locate the mitral landmark (left midclavicular line, fifth intercostal space) and listen with a stethoscope.
18.	Assess for normal and abnormal sounds.
Respiratory Auscultation	
19.	State that you are placing the patient in an appropriate position and stand behind the patient.
20.	Listen to posterior upper lobes, starting at C7 and moving right to left (or left to right) down to T3.
21.	Assess for normal and abnormal sounds. Listen for one respiration per location.
22.	Listen to posterior lower lobes, starting at T3 and moving right to left (or left to right) down to T10.

23.	Assess for normal and abnormal sounds. Listen for one respiration per location.
24.	Listen to the posterior lower lobes on the posterior axillary line, moving right to left (or left to right) to T8-T10.
25.	Assess for normal and abnormal sounds. Listen for one respiration per location.
26.	State that you are placing the patient in an appropriate position and stand in front of the patient.
27.	Listen to anterior upper lobes, starting above the clavicle and moving right to left (or left to right) down to the sixth rib on the anterior axillary line.
28.	Assess for normal and abnormal sounds. Listen for one respiration per location.
Abdominal Auscultation	
29.	State that you are placing the patient in an appropriate position and stand in front of the patient.
30.	Listen to the right lower quadrant.
31.	Assess for normal and abnormal sounds.
32.	Listen to the right upper quadrant.
33.	Assess for normal and abnormal sounds.
34.	Listen to the left upper quadrant.
35.	Assess for normal and abnormal sounds.
36.	Listen to the left lower quadrant.
37.	Assess for normal and abnormal sounds.
38.	Provide for patient comfort and safety.
39.	Wash hands and sanitize stethoscope.
40.	Document assessment.

Name: _____

Class: _____

Auscultation Quiz

Match the abnormal finding to the correct description by putting the number of the abnormal next to the description.

1. Mid-Systolic Click	Crescendo-decrescendo blowing sound between S1 and S2.
2. S3	Slow breathing. Rate <10 per minute.
3. S4	High-pitched rushing sounds at over 30 times per minute that indicate increased motility.
4. Cardiac Friction Rub	The high-pitched snap sound associated with mitral valve prolapse.
5. Systolic Murmur	Rate over 100 beats/min.
6. Diastolic Murmur	Rapid, shallow breathing. Rate >24 per minute.
7. Bradycardia	Low-pitched, soft sound after S2.
8. Tachycardia	High-pitched, crowing sound on inspiration caused by croup.
9. Bradypnea	Low-pitched, loud bubbling and gurgling sounds.
10. Tachypnea	High-pitched, short crackling sounds.
11. Wheeze	The high-pitched scratchy sound caused by inflammation of the pericardium.
12. Pleural Friction Rub	The low-pitched soft sound heard before S1.
13. Stridor	High or low-pitched, squeaking sounds caused by narrowed airways.
14. Fine Crackles	Diminished, soft sounds at under five times per minute that indicate decreased motility.
15. Coarse Crackles	Crescendo-decrescendo blowing sound between S2 and S1.
16. Hyperactive Bowel Sounds	The low-pitched, coarse grating sound caused by pleuritis.
17. Hypoactive Bowel Sounds	Rate of less than 50 beats/min.

Auscultation Quiz – Answer Key

Match the abnormal finding to the correct description by putting the number of the abnormal next to the description.

1. Mid-Systolic Click	5	Crescendo-decrescendo blowing sound between S1 and S2.
2. S3	9	Slow breathing. Rate <10 per minute.
3. S4	16	High-pitched rushing sounds at over 30 times per minute that indicate increased motility.
4. Cardiac Friction Rub	1	The high-pitched snap sound associated with mitral valve prolapse.
5. Systolic Murmur	8	Rate over 100 beats/min.
6. Diastolic Murmur	10	Rapid, shallow breathing. Rate >24 per minute.
7. Bradycardia	2	Low-pitched, soft sound after S2.
8. Tachycardia	13	High-pitched, crowing sound on inspiration caused by croup.
9. Bradypnea	15	Low-pitched, loud bubbling and gurgling sounds.
10. Tachypnea	14	High-pitched, short crackling sounds.
11. Wheeze	4	The high-pitched scratchy sound caused by inflammation of the pericardium.
12. Pleural Friction Rub	3	The low-pitched soft sound heard before S1.
13. Stridor	11	High or low-pitched, squeaking sounds caused by narrowed airways.
14. Fine Crackles	17	Diminished, soft sounds at under five times per minute that indicate decreased motility.
15. Coarse Crackles	6	Crescendo-decrescendo blowing sound between S2 and S1.
16. Hyperactive Bowel Sounds	12	The low-pitched, coarse grating sound caused by pleuritis.
17. Hypoactive Bowel Sounds	7	Rate of less than 50 beats/min.

Sources

1. Jarvis, C. (2020). *Physical Examination and Health Assessment*. Elsevier.
2. Jensen, S. (2019). *Nursing Health Assessment*. Wolters Kluwer