

Canine CPR Trainer Curriculum



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This curriculum will teach basic CPR for dogs including indications, positioning, and performing.

Author



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Curriculum Structure

The *Canine CPR Trainer Curriculum* is composed of the following lessons. Approximate lesson times are included.

Lesson	Title	Approximate Time
One	Canine CPR Overview	105 minutes
Two	Performing Canine CPR	105 minutes
	Total	3.5 hours

Lesson Structure

Each lesson begins with a Lesson Overview, Lesson Objectives, and a Lesson at a Glance table, which lists lesson activities, materials required, suggested preparation steps, and approximate class time.

Lesson Sections:

FOCUS

Every lesson begins with a FOCUS activity intended to capture participants' attention. This may be in the form of a small or large class discussion, a game, a demonstration, or a review of previous lesson information. During this activity, participants are introduced to the topic of the lesson.

LEARN

The LEARN activity in each lesson varies in its presentation mode. It may be a slide presentation, group activity, or demonstration.

REVIEW

The majority of lessons end with a REVIEW activity intended to briefly review the lesson's key messages or main points.

Lesson One – Canine CPR Overview

Lesson Overview

CPR, which stands for cardiopulmonary resuscitation, is a life-saving measure that can be employed in critically ill pets. This lesson will cover scenarios and indication for CPR in a dog.

Lesson Objectives

After completing this lesson, participants will:

- Know what CPR is
- Learn how to be prepared for CPR on a dog
- Understand when CPR may be indicated on a dog

Lesson at a Glance

Activity	Materials	Preparation	Approximate Class Time
FOCUS	• <i>CPR Readiness Worksheet</i> • Whiteboard and dry erase markers	1. Print the <i>CPR Readiness Worksheet</i> (one per participant). 2. Clear the whiteboard.	30 minutes
LEARN	• <i>Canine CPR Overview</i> slide presentation	1. Print/photocopy <i>Canine CPR Overview</i> slides (one set per participant). 2. Prepare the <i>Canine CPR Overview</i> slide presentation for viewing.	45 minutes
REVIEW	• <i>Lesson One Quiz</i> • <i>Lesson One Quiz – Answer Key</i>	1. Print the <i>Lesson One Quiz</i> (one per participant).	30 minutes

Lesson One – Canine CPR Overview

FOCUS: What Is Needed to Be Ready For CPR?

30 minutes

Purpose:

To engage participants in the lesson and get them to think about CPR and how to be prepared in an emergency.

Materials:

- *CPR Readiness Worksheet*
- Whiteboard and dry erase markers

Facilitation Steps:

1. Let participants know that today's lesson will cover ways to ensure they and the clinic they may someday work in are prepared to effectively administer CPR to a dog.
2. Ask participants what types of situations might require CPR in a canine patient at a veterinary hospital. Make a list on the whiteboard of their ideas.
3. After all participants give their input, distribute the *CPR Readiness Worksheet*. Allow for discussion on the actual indications versus what participants came up. Indications for CPR in a dog will be discussed more in-depth in the LEARN section.

Name: _____ Class: _____

CPR Readiness Worksheet

CPR, or cardiopulmonary resuscitation, is used in emergency, life-threatening situations. Just like in humans, the procedure uses artificial respirations and chest compressions to help revive a dog when they aren't breathing or don't have a heartbeat.

In a veterinary setting, the following items should be readily available for quick and easy use in an emergency.

- Resuscitation orders for each patient
- Oxygen
- All sizes of endotracheal tubes (3.0 mm to 15 mm)
- Endotracheal tube fastener
- Fully stocked emergency cart or box with:
 - Atropine
 - Epinephrine
 - Diphenhydramine
 - Calcium gluconate
 - Naloxone
 - Lidocaine
 - Dextrose
 - Dexamethasone SP
 - Dobutamine
 - Syringes and needles
- IV catheters (24-18 g)
- Medical tape or Elasticon
- Heparinized flush
- Battery-powered clippers
- Pulse oximeter
- Quick drug dosage chart

Lesson One – Canine CPR Overview

LEARN: When Is CPR Necessary?

45 minutes

Purpose:

This section will aid participants in learning the situations in which CPR may be indicated in a canine patient.

Materials:

- *Canine CPR Overview* slide presentation

Facilitation Steps:

1. Distribute printed copies of the slides and have participants keep the worksheet from the FOCUS activity.
2. Using the slide presentation, discuss each slide with the class. Notes are included on the slides.

Slide 1: Introductory Slide

Slide 2-3: Indications for CPR on a Dog

The ultimate decision on whether to administer CPR to a patient lies with the doctor on the floor. Assistants can do an initial evaluation and begin compressions. When in doubt, compressions should always be initiated until more information is gathered.

If the dog does not have a regular, actuatable heartbeat, CPR is likely indicated. A stethoscope is required to make this determination.

Slide 4: Respiratory Failure

CPR is often unsuccessful in restoring spontaneous circulation. It should be attempted, however, on patients with the proper orders/permission.

Slide 5: CABDEF

This stands for cardiovascular, airway, breathing, drugs, ECG, and fluids. It will be covered in more detail in the next lesson.

Slide 6: C = Cardiovascular

If the heart stops, CPR serves to restore blood circulation, supplying oxygen to the tissues.

Slide 7: Common Precursors to CPR

Heart failure (congestive, chronic, or acute) and trauma (hit by car) are the most common precursors to the need for CPR in dogs.

Slide 8: What to Do

Alerting the DVM in charge should always be the first step.

Slide 9: Preparedness

A dedicated CPR area with oxygen (flow), a container with emergency drugs, all sizes of endotracheal tubes, IV catheter supplies, and an ECG with a pulse oximeter.

Slide 10-11: Medications

If the clinic or hospital doesn't have either an electronic calculating system, a chart on every patient with their emergency med doses, or this chart, they should procure a method of quick dosing.

Slide 12: Teamwork

CPR is designed to save lives and it takes a team. Each team member needs to know their role and remain calm.

Slide 13: Veterinary CPR Staff

All team members should be CPR certified. The slide contains a link to the course. Refresher courses are recommended every 6-12 months.

Slide 14: Roles

The code leader is most often the doctor in charge but may be a lead technician or nurse. Their job is to oversee the code and direct the team members involved. A scribe should be assigned to record all the events during the code. After the code, the leader should gather the team and go over what went well and what did not, including strategies to improve.

Lesson One – Canine CPR Overview

REVIEW: Put It into Action

30 minutes

Purpose:

This review activity allows participants to implement their newly acquired knowledge about canine CPR.

Materials:

- *Lesson One Quiz*
- *Lesson One Quiz – Answer Key*

Facilitation Steps:

1. Divide participants into small groups.
2. Read each of the scenarios below aloud to the class. Participants should be given a few minutes to discuss with their group and decide if CPR is indicated or not.
 - a. A 12-year-old Miniature Schnauzer presents to the veterinary clinic as an emergency. The owner states that the dog was hit by a car and rushed immediately to the hospital.

Upon initial examination, the dog is not breathing, but a faint heartbeat is detected (approximately 25 bpm).
 - b. A six-month-old wirehaired dachshund is found unresponsive in the owner's backyard. The owner does not know how long the dog has been ill, but they have been gone since early in the morning and it is 2 p.m.

The dog presents to the hospital with no respiration, no detectable heartbeat, and is cold to the touch.
 - c. A two-year-old Belgian Malinois walks into the clinic and the owner informs the front desk that she is concerned that the dog is critically ill.

Upon initial examination, the dog is ambulatory, alert, and lunging (trying to bite) staff.

- d. A six-year-old Cocker Spaniel presents being carried by its owner. The owner reports that the dog has seemed “off” for about a week.

Today, the dog did not eat breakfast and was later found weak and minimally responsive under a bed in the house.

Upon presentation, the dog is laterally recumbent and non-responsive to gentle stimuli but has a heart rate of 120 bpm and shallow breaths.

- e. A 14-year-old Labrador Retriever is being hospitalized in the clinic post-operatively after a surgery for laryngeal paralysis.

A nurse performing patient checks notices that the dog “looks funny.” Upon initial examination, the dog does not have a detectable heartbeat. The dog's chart is marked “CPR if needed.”

3. Call on each group for input and allow them to explain their reasoning.
4. Distribute the *Lesson One Quiz* and give participants time to complete it.
5. Go over the answers together using the answer key.

Name: _____ Class: _____

Lesson One Quiz

Instructions: Answer all questions by circling the correct choice or filling in the information.

1. The most common indication for CPR in a dog is:
 - a. Colic
 - b. Heart failure
 - c. Distemper
 - d. Kidney failure

2. The first thing to determine when presented with a non-responsive patient is:
 - a. If they have a functional heartbeat
 - b. If they are dehydrated
 - c. How severe their injuries are
 - d. If there is head trauma

3. If a dog presents with no heartbeat, CPR should be initiated until more information can be determined.
 - a. True
 - b. False

4. What vital piece of medical equipment must you have to determine if the dog has a heartbeat?
 - a. Reflex hammer
 - b. Thermometer
 - c. Stethoscope
 - d. Binaural

5. In veterinary medicine, CPR is successful at restoring spontaneous circulation in almost every case.
 - a. True

- b. False
6. In the acronym "CABDEF," C stands for:
- a. Canine
 - b. Core
 - c. Classic
 - d. Cardiovascular
7. CPR is:
- a. Using chest compressions to circulate blood and oxygenate the tissues
 - b. Using a stethoscope to listen to a body organ
 - c. Using a stethoscope to feel for abnormalities on a patient
 - d. Using a ventilator to breathe for the patient
8. Being hit by a car (trauma) is a major indication for possible need for CPR in a dog.
- a. True
 - b. False
9. The first thing to do when a severely ill patient arrives who may need CPR is:
- a. Alert the doctor on the floor
 - b. Console the owner
 - c. Inject 2% lidocaine IV
 - d. Test the patient's glucose
10. The CPR team leader is responsible for documenting everything that occurs during the code.
- a. True
 - b. False

Name: _____ Class: _____

Lesson One Quiz – Answer Key

Instructions: Answer all questions by circling the correct choice or filling in the information.

1. The most common indication for CPR in a dog is:
 - a. Colic
 - b. Heart failure**
 - c. Distemper
 - d. Kidney failure

2. The first thing to determine when presented with a non-responsive patient is:
 - a. If they have a functional heartbeat**
 - b. If they are dehydrated
 - c. How severe their injuries are
 - d. If there is head trauma

3. If a dog presents with no heartbeat, CPR should be initiated until more information can be determined.
 - a. True**
 - b. False

4. What vital piece of medical equipment must you have to determine if the dog has a heartbeat?
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 - c. Inject 2% lidocaine IV
 - d. Test the patient's glucose

10. The CPR team leader is responsible for documenting everything that occurs during the code.
 - a. True**
 - b. False

Lesson Two – Performing Canine CPR

Lesson Overview

This lesson will cover how to position a dog for CPR as well as performing the procedure in basic terms.

Lesson Objectives

After completing this lesson, participants will:

- Know how to properly position a dog for CPR
- Learn how to intubate a dog for CPR
- Understand basic canine CPR skills

Lesson at a Glance

Activity	Materials	Preparation	Approximate Class Time
FOCUS	• <i>Heart Blood Flow</i> worksheet • Whiteboard • Red, blue, and black dry erase markers • Red and blue colored pencils	1. Print the <i>Heart Blood Flow</i> (one per participant). 2. Clear the whiteboard and gather the markers. 3. Prepare the colored pencils.	30 minutes
LEARN	• <i>Performing Canine CPR</i> slide presentation • Canine CPR Trainer	1. Print the <i>Performing Canine CPR</i> slides (one set per participant). 2. Prepare the <i>Performing Canine CPR</i> slide presentation for viewing. 3. Prepare the Canine CPR Trainer for demonstration.	45 minutes
REVIEW	• Canine CPR Trainer • <i>Lesson Two Quiz</i> • <i>Lesson Two Quiz</i> – Answer Key	1. Prepare the Canine CPR Trainer for participant practice. 2. Print the <i>Lesson Two Quiz</i> (one per participant).	30 minutes

Lesson Two – Performing Canine CPR

FOCUS: How Does Blood Flow Work?

30 minutes

Purpose:

This introduction lesson will serve to engage participants in the lesson and introduce the concepts of blood flow in dogs. This knowledge is imperative to understanding the goal of successful CPR.

Materials:

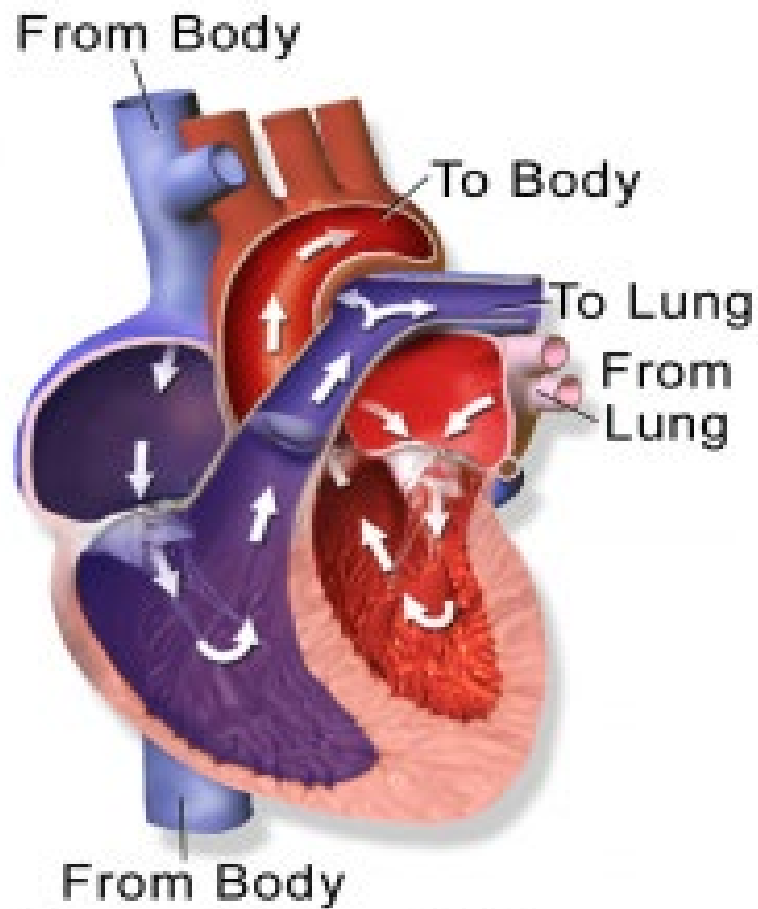
- Whiteboard
- *Heart Blood Flow* worksheet
- Red, blue, and black dry erase markers
- Blue and red colored pencils

Facilitation Steps:

1. Let participants know that today's lesson will be covering the blood flow through the cardiovascular system of a dog. This blood flow is the purpose of CPR in a dog (to keep the tissues, especially the brain, oxygenated).
2. Distribute the *Heart Blood Flow* worksheet and draw a similar diagram on the whiteboard in black. Give participants blue and red colored pencils.
3. Discuss with the class how blood flows – color in the flow on the whiteboard.
4. Ask participants to color their own diagrams along with you.

Name: _____ Class: _____

Heart Blood Flow



Normal Blood Flow

Lesson Two – Performing Canine CPR

LEARN: Proper CPR

45 minutes

Purpose:

This section will teach students the basics of canine CPR.

Materials:

- *Performing Canine CPR* slide presentation
- Canine CPR Trainer

Facilitation Steps:

1. Distribute printed copies of the slide presentation to participants.
2. Using the slide presentation provided, discuss each slide with the class. Notes are included on the slides.
3. While teaching from the slides, use the Canine CPR Trainer to demonstrate proper CPR technique.

Slide 1: Introductory Slide

Slide 2: CABDEF

This acronym can be used to track where team members are in the code and help prioritize care. The code leader is ultimately responsible for the order.

Slide 3: Proper Positioning

Initial position is based on the dog's status – if they are breathing, have a heartbeat, how long they have been coding etc. The attending doctor makes the call of which procedure to start.

Slide 4: Lateral Recumbency

Slide 5: Sternal Recumbency

Slide 6: Intubation

Endotracheal intubation allows oxygen to be delivered directly to the respiratory system and is always preferred over mouth-to-snout if possible.

Slide 7: IV Catheterization

This is a topic within itself, but IV access is imperative to be able to give fluids and medications during a code.

Slide 8: Airway Check

Dogs that are conscious may bite. This procedure must be performed carefully.

Slide 9: Checking a Pulse

In the clinic or hospital setting, all coding dogs should be connected to an ECG. A pulse can also be felt in the femoral artery (inner hind leg).

Slide 10: Chest Compressions

Most dogs are positioned as in the picture on the slide. Some “barrel-chested” dogs may need to be placed more toward their back for adequate compression.

Slide 11: Procedure

Other (more modern) songs can be used to achieve 120 cpm, but this is a good one if students know it.

Slide 12-13: Breathing

Oxygen from an anesthesia machine is always preferred, but if not available, an ambu bag can be used. If ET intubation is not possible, mouth-to-snout breaths can be used. Participants should close the dog's mouth and cover the dog's nostrils with their mouth. Breaths are delivered by blowing into the snout.

This cycle should continue as long as necessary. Medication administration and monitoring should be performed by other team members so as not to disrupt the cycle.

Slide 14: Recordkeeping

Each clinic or hospital should have pre-printed forms that allow the scribe to record all pertinent information.

Lesson Two – Performing CPR on a Dog

REVIEW: Put It into Action

30 minutes

Purpose:

This review activity allows participants to implement their newly acquired knowledge of performing CPR on a dog. This activity provides hands-on training and experience with the *CPR Dog* model.

Materials:

- Endotracheal tube
- Ambu bag
- Snout covers
- Canine CPR Trainer

Facilitation Steps:

1. Split participants up into as many groups as you have Canine CPR Trainers. Each group needs a minimum of four participants.
2. Participants will run a mock code on the Canine CPR Trainer. There are four positions – intubation, chest compressions, medications/fluids, and scribe (lead).
3. Have each rotation intubate, mock IV catheter place, and do chest compressions. Then participants will switch positions for a total of four mock codes.
4. Distribute the *Lesson Two Quiz* and give participants time to complete it.
5. Go over the answers together using the answer key.

Name: _____ Class: _____

Lesson Two Quiz

Instructions: Answer all questions by circling the correct choice or filling in the information.

1. What position should a dog be placed in for chest compressions?
 - a. Sternal
 - b. Dorsal
 - c. Left lateral
 - d. Right lateral

2. CPR should be immediately initiated on any dog that is not conscious.
 - a. True
 - b. False

3. The appropriate positioning for IV catheter placement and ET intubation in a dog is:
 - a. Sternal
 - b. Dorsal
 - c. Left lateral
 - d. Right lateral

4. “Barrel-chested” dogs may need to be placed somewhat toward the back for successful CPR chest compressions.
 - a. True
 - b. False

5. An endotracheal tube is used during canine CPR to:
 - a. Correct an irregular pattern of heartbeats
 - b. Provide oxygen to the dog
 - c. Allow access to the heart for medications
 - d. Correct metabolic acidosis

6. Chest compressions should be administered at _____ cpm and by compressing ____ of the chest height.
 - a. 120 and 1/3
 - b. 170 and 1/2
 - c. 220 and 1/3
 - d. 100 and 1/4
7. The three main veins used in the canine for IV access are the:
 - a. Carotid, cephalic, coronal
 - b. Lateral saphenous, medial saphenous, carotid
 - c. Cephalic, brachial, jugular
 - d. Cephalic, lateral saphenous, jugular
8. Which of the following acronyms can be used as an aid in canine CPR?
 - a. ABCDEF
 - b. CABDEF
 - c. BACDEF
 - d. DEFABC
9. A pause for breaths should be made every _____ seconds during chest compressions.
 - a. 60
 - b. 120
 - c. 30
 - d. 10
10. To deliver oxygen to the patient during CPR, mouth-to-snout breathing is the preferred and most effective method.
 - a. True
 - b. False

Name: _____ Class: _____

Lesson Two Quiz – Answer Key

Instruction: Answer all questions by circling the correct choice or filling in the information.

1. What position should a dog be placed in for chest compressions?
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