



JROTC Virtual Learning

Bites, Stings and Poisonous Hazards

April 28, 2020



STANDARDIZED TRAINING SESSION

JROTC TRAILS WEST BRIGADE: Truman, Van Horn, William Chrisman High Schools

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**Student Learning Plan Health and Wellness:
Bites, Stings and Poisonous Hazards [U4C2L9]**



U4C2L9

Bites, Stings and Poisonous Hazards

Key Words:

Allergic Reaction

Antivenin

Calamine

Discoloration

Rabies

Tetanus

Venom

What You Will Learn to Do

Determine first aid treatment for bites, stings and poisonous hazards

Linked Core Abilities

- Do your share as a good citizen in your school, community, country, and the world

Skills and Knowledge You Will Gain Along the Way

- Identify types of venoms
- Relate snakes to their bites
- Explain the effects of animal and human bites
- Identify the symptoms of insect bites and stings
- Associate the types of poisonous plants to the reactions they cause
- Determine how to treat for contact with poisonous plants

Introduction

With so many outdoor activities to participate in, such as hiking, camping, bicycle riding, skate boarding, and skiing, it is common to come across emergencies involving bites, stings, and poisonous hazards. It is estimated that one of every two Americans will be bitten at some time by an animal. Dogs are responsible for about 80 percent of all animal-bite injuries. Depending upon where you live, the type of first aid you should perform for snakebites and plants will vary. Knowing what to do when in the outdoors can mean the difference between life and death.

Snake Bites

If you spend much of your time outdoors, it may be common for you to come across snakes; however, your chances of a snake bite are remote if you remain alert and careful. There are poisonous and nonpoisonous snakes, so the severity of a snake bite depends on whether the snake is poisonous or not. Beyond that, the severity of a snake bite depends on the type of snake, location of the bite, and the amount and type of **venom** injected.

Snake Bites

Symptoms include:

- Puncture marks on the skin may be visible
- The following may take from 15 minutes to 2 hours to develop:
 - Redness and swelling of the bitten area
 - Nausea and vomiting
 - Diarrhea
 - Headache
 - Double vision
 - Faintness
 - Tightness in the chest and difficult breathing
 - Unconsciousness



Courtesy of Army JROTC

Types of Snake Bite Venom

There are three types of venoms: Neurotoxin, which affects the nervous system and can cause death by paralysis; Hemotoxin, which digests tissue including blood cells; and Cardiotoxin, which directly affects the heart.

Types of Snakes

There are approximately 130 different varieties of nonpoisonous snakes in the United States. They have oval-shaped heads and round pupils. Poisonous snakes exist throughout the world, primarily in tropical to moderate climates.

In the United States, there are four kinds of native poisonous snakes. Three of these four, the rattlesnake, copperhead, and cottonmouth (water moccasin), are pit vipers. Pit vipers in other parts of the world include the bushmaster and fer-de-lance in Central and South America, the tropical rattlesnake in Central America, and the Malayan pit viper in eastern Asia.

Pit Vipers

Pit vipers have slit-like pupils; flat, triangular-shaped heads; small, deep, heat-sensing pits between their nostrils and eyes; and in most cases, hemotoxic venom. When a pit viper bites, it injects this venom from sacs through long, hollow fangs. This produces a severe burning pain, along with **discoloration** and swelling around the fang marks. The hemotoxin destroys blood cells, which causes the discoloration of the skin. Blisters and numbness in the affected area follow this reaction. Pit viper bites attack the circulatory system, possibly causing weakness, rapid pulse, and shortness of breath, as well as nausea, vomiting, and shock.

Cobras

Corals, cobras, kraits, and mambas belong to the cobra family. The coral snake is the only one native to the United States. Rings of red, yellow, and black color encircle its body. While other nonpoisonous snakes have the same colors, only the coral snake has a red ring next to a yellow ring. The cobra, found in Africa and Asia, forms a hood with its neck when on the defensive. The krait, found in India and southeast Asia, is brightly banded, while the mamba in Africa is either almost black or green. These snakes look very different, but all four inject their venom, a neurotoxin, through short, grooved fangs leaving a characteristic bite pattern. There is minimal pain and swelling compared to a pit viper bite, but since their powerful venom affects the central nervous system, it can cause blurred vision, drooping eyelids, slurred speech, drowsiness, and increased salivation and sweating. Nausea, vomiting, shock, respiratory difficulty, paralysis, convulsions, and coma develop if the bite is not treated promptly.

Sea Snakes

Sea snakes are found in warm water areas of the Pacific and Indian Oceans. They have small heads, thick bodies, and tails flattened along the sides. Their fangs are only 1/4 inch long, but their venom is very poisonous.

Treating Snakebites

Snakebites are rarely fatal if treated within an hour or two, but they can cause pain and illness and may severely damage a bitten hand or foot. Although snakes do not always inject venom, all snakes may carry **tetanus** (lockjaw). Therefore, anyone bitten by a snake, whether poisonous or nonpoisonous, should receive immediate medical attention.

One of the most important parts of treating a snakebite is identifying the type of snake making the bite. The type of **antivenin** used in medical treatment of snakebites varies depending on the type of venom injected. If you can identify the type of snake causing the injury, let Emergency Medical Services know when you call for help or phone the information ahead to the hospital if you plan to transport the victim yourself. If you cannot identify the snake, try to kill it without risk to yourself or delaying first aid. Then, show it to emergency medical personnel or take it to the hospital along with the victim for identification.

To treat snakebites:



Snake Bites

- #1** As soon as possible, bandage the bitten area; bandage over clothing unless it is thick or stiff
- #2** Apply a second bandage, working upwards from the toes or fingers to the elbow or knee *
- #3** Immobilize the limb with a splint

* The roller bandage should be tight, but not so tight as to cut off circulation

Courtesy of Army JROTC

Prevention of Snakebites

Most snakes are shy and passive. Unless they are injured or disturbed, they tend to avoid contact with humans. You can prevent a snakebite by using caution and common sense. If you are working outside clearing dense undergrowth, wear gloves, long sleeves, long pants, and boots for protection. When hiking in the wilderness, wear boots and long pants. Try to walk in open areas or stay on established paths. Look where you are stepping or placing a hand if climbing or pushing away tree limbs. Check before sitting on a rock or fallen tree. If possible, stay away from brush, rocks, and undergrowth. If you must handle a snake, even a freshly killed one, use a long tool or stick.

Human and Animal Bites

Animal bites can puncture the skin causing a high risk of infection. Animal bites also pose the threat of exposing the victim to rabies. **Rabies** is a potentially deadly disease that is spread through the saliva of rabid animals, which behave strangely. Rabid animals include wild animals such raccoons, bats, or skunks, and even stray pets.

Human bites, like animal bites, can cause infections. This usually happens in fights for example, when one person's hand may come in contact with another person's mouth. When human bites puncture the skin, they have a high risk of infection and also pose a risk of injury to tendons and joints.

Animal Bites

Possible symptoms include:

- Break or major cuts in the skin with or without bleeding
- Bruising
- Crushing injuries
- Puncture-type wound

Infection



Courtesy of Army JROTC

Treating Animal Bites


Treat a victim of an animal bite as follows:

Animal Bites

- #1** Wash your hands thoroughly before AND after with soap, or use sterile gloves
- #2** Bite *IS NOT* bleeding severely - Wash thoroughly with mild soap and running water for 3 to 5 minutes, then apply antibiotic ointment and a clean dressing
- #3** Bite *IS* actively bleeding - Apply direct pressure with a clean, dry cloth until bleeding stops; raise the area of the bite
- #4** Carefully monitor for 24 to 48 hours for signs of infection (increasing skin redness, swelling, and pain) *

* Bite on hand or fingers - Seek medical attention immediately

* Seek medical attention if the bite becomes infected



Courtesy of Army JROTC

Insect Bites and Stings

In the outdoors, you may come in contact with various types of biting and stinging insects — bees, mosquitoes, ticks, fleas, spiders, etc. Most of these insect bites and stings result in minor reactions, such as itching, redness, swelling, and irritation. However, scorpions and certain spiders can inject powerful poisons when they bite, and some people may have an **allergic reaction** to an insect bite or sting, particularly made by bees or wasps. In these cases, seek medical treatment immediately.

The black widow and brown recluse spiders, tarantulas, and scorpions are some of the more harmful insects you may encounter. Venom from the black widow is neurotoxic and may cause stomach and muscle cramps, breathing difficulties, nausea, sweating, vomiting, and convulsions. Tarantula venom is basically neurotoxic and may produce symptoms like that of a black widow bite, but in some cases can affect the heart and may digest tissue producing a severe local wound. The brown recluse spider can produce severe tissue damage around the bite, possibly leading to gangrene; and while stings from certain types of scorpions are painful but not dangerous, some can cause nausea, fever, stomach cramps, and possible convulsions and shock.

In most cases, bee and wasp stings produce minimal swelling, pain, redness, itching, and burning at the site of the sting. Multiple stings may cause headaches, fever, muscle cramps, and drowsiness. Symptoms from an allergic reaction may include:

Insect Bites and Stings

Symptoms of an allergic reaction include:

- Swelling, itching, and pain at the sting site
- Itchy rash and weals elsewhere on the body
- Swelling of eyelids and face
- Breathing difficulty



Courtesy of Army JROTC

Treating Insect Bites and Stings

Take the following basic first aid measures regardless of what caused the bite or sting:

Insect Bites and Stings

- #1** Move to a safe area
- #2** For a sting - Scrape or brush off the stinger with a straight-edged object
- #3** Apply a cold pack
- #4** Apply hydrocortisone cream
- #5** Take an antihistamine



Courtesy of Army JROTC

Treat more serious allergic reactions as you would a snakebite.

- a. Apply constricting bands above and below the site.
- b. Be prepared to perform basic life-support measures.
- c. To positively identify the insect, attempt to capture it without putting yourself at risk.
- d. Seek medical aid right away.

If signs of infection like pus, red streaks leading away from the bite, swollen glands, or fever occur within hours or several days after an insect bite, seek medical attention.

Prevention of Insect Bites and Stings

Wear insect repellent when outside in areas where biting insects are present. Re-apply repellent every few hours when participating in activities that cause heavy perspiration. Wear appropriate protective clothing when hiking or camping in the wilderness or working in a yard, garden, or other woody or overgrown area.

Poisonous Plants

Most plants are harmless, but a few can cause allergic reactions upon contact. For example, plants of the poison ivy group, including poison oak and poison sumac, produce an oily substance that irritates the skin of many people. Reactions to this substance include a rash characterized by redness, blisters, swelling, and intense burning and itching, as well as headaches and fever. Although the rash usually begins within a few hours after contact, it may appear 24 to 48 hours later.

Poisonous Plants

Symptoms include:

- Red rash with extreme itching
- Rash erupts in streaks or patches where the plant came in contact with the skin
- Rash includes red bumps and may also form large, weeping blisters



Courtesy of Army JROTC

Treatment for Poisonous Plant Contact

In general, treat someone who has come in contact with a poisonous plant by washing the area and treating with an oral antihistamine and **calamine** lotion.

Poisonous Plants

- #1 Remove exposed clothing and wash
- #2 Wash the area thoroughly with soap and water as soon as possible
- #3 Treat itching with an oral antihistamine and one of the following:
 - Colloid oatmeal baths
 - Paste of baking soda and water
 - Calamine lotion
 - Topical hydrocortisone cream



Courtesy of Army JROTC

Prevention of Exposure to Poisonous Plants

Become familiar with what poison ivy and other poisonous plants look like, so you can recognize a poisonous plant and avoid contacting it.

The following are other precautions you should take to limit your exposure to poisonous plants:

- Dress appropriately when participating in outdoor activities.
- Avoid areas where you are aware that poisonous plants grow.
- Do not eat plants or parts of plants that you do not recognize.
- Do not put grass, twigs, stems, or leaves in your mouth.

Conclusion

Being able to adjust to new environments and protect yourself from harmful conditions is very important when participating in outdoor activities. Factors in nature such as extreme temperatures and humidity; animal, snake, and insect bites; and poisonous plants can pose a threat to you if you do not take precautions to guard against the possibility of injury. By being aware of potential hazards, knowing how to treat outdoor-related injuries, and exercising common sense, you can cope successfully with the environment and enjoy your time in the great outdoors.

Lesson Check-up



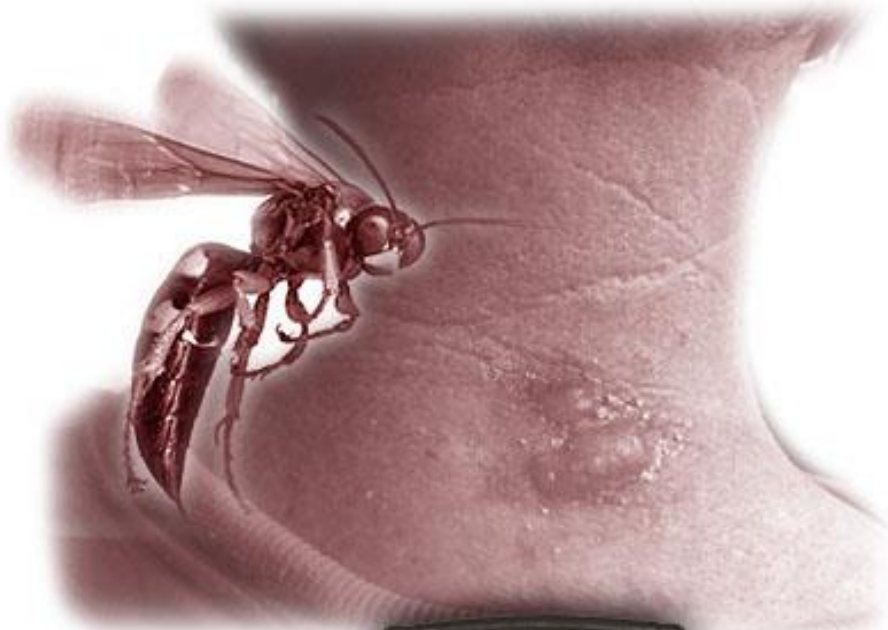
1. Why is it important to try and determine what kind of snake caused a bite?
2. How would you treat someone who had an allergic reaction to an insect bite or sting?
3. How would you treat someone who has come into contact with a poisonous plant?

Unit 4

Wellness, Fitness, and First Aid

LESSON 9:

FIRST AID FOR BITES, STINGS, AND POISONOUS HAZARDS



Unit 4

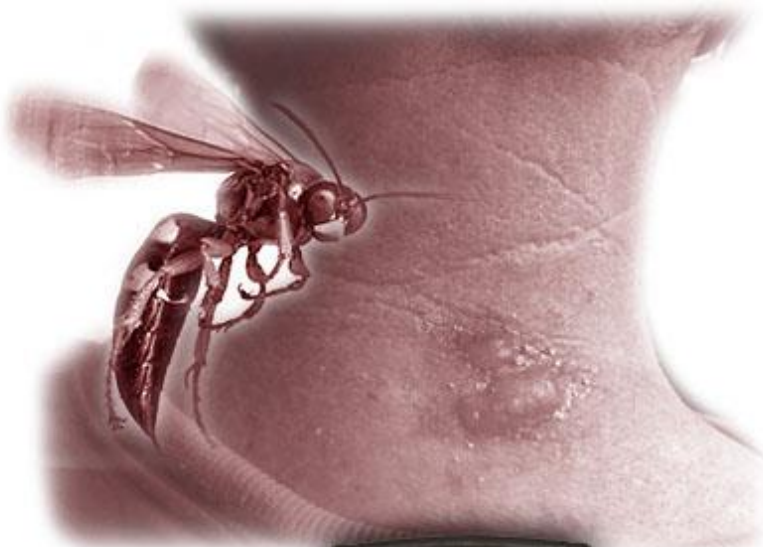
Wellness, Fitness, and First Aid

LESSON 9:

FIRST AID FOR BITES, STINGS, AND POISONOUS HAZARDS

Think about common outdoor injuries that can occur on a camping or hiking trip.

Energizer





Types of Injuries You Should Prepare for While on a Camping Trip





Reflection:

- Have you ever worried about being bitten by a snake or spider? If so, why?
- What type of plants do you have to be aware of that are poisonous?

Unit 4

Wellness, Fitness, and First Aid

LESSON 9:

FIRST AID FOR BITES, STINGS, AND POISONOUS HAZARDS

Think about what you know about bites, stings, and poisonous hazards.


Inquire - What do you already know?





(U4C2L9:F3)

How do you remove the stinger from an insect bite?

- A) Cover the stinger with Vaseline
- B) Squeeze the stinger so it pops out on its own
-  C) Scrape the surface with a fingernail or knife
- D) You should not remove the stinger

[Click to see the correct answer](#)



- Prepare for this lesson by discussing the key questions of this [Student Learning Plan](#).
 - What will you accomplish in this lesson?
 - Why is the lesson important?
 - When will you have successfully met the lesson's purpose?
- Answer the Lesson Question:
 - How can bites, stings, and poisonous hazards be treated and prevented?





Learning Objectives

- Identify four types of poisonous snakes
- Describe symptoms of and treatment for snake bites
- Describe symptoms of and treatment for human and animal bites
- Describe symptoms of and treatment for insect bites and stings
- Describe symptoms of and treatment for poisonous plant exposure
- Identify ways to prevent bites, stings, and poisonous plant exposure
- Define key words: allergic reaction, antivenin, calamine, discoloration, rabies, tetanus, venom





With your team, create a KWL chart for your assigned topics. Determine what you know and want to know for the K and W columns. Post your chart at the front of the room for class review.

- Snakebites
- Human/animal bites
- Insect bites/stings
- Poisonous plants



Divide
into four
teams

Click Next to fill out the KWL Chart

Unit 4

Wellness, Fitness, and First Aid

LESSON 9:

FIRST AID FOR BITES, STINGS, AND POISONOUS HAZARDS



Insert KWL Chart.swf and delete after
slicing



Reflection:

- What surprised you about what you did/did not know?
- How prepared are you currently to provide first aid for bites, stings, and poisonous hazards?

Unit 4

Wellness, Fitness, and First Aid

LESSON 9:

FIRST AID FOR BITES, STINGS, AND POISONOUS HAZARDS

Think about the hazards you may encounter from animals, insects, and plants.

Gather Part 1 - So, what else do you need to know or learn?





Insert U4C2L9_Flash 1 - Symptoms.swf
and delete after slicing



(U4C2L9:F2)

The most important thing to remember when treating a snake bite is to _____.

- A) increase the circulation of the victim
- B) give the victim liquids to thin out the venom
- C) identify the snake that made the bite
- D) suck the venom from the bite site

[Click to see the correct answer](#)



(U4C2L9:G1)

Name the three types of venoms.

- A) Neurovenom, Hemovenom, and Cardiovenom
- B) Neurotoxins, Hemotoxins, and Cardiotoxins
- C) Neurotoxins, Hemotoxins, and Respirotoxins
- D) Cerebrotoxins, Hemotoxins, and Pulmonary toxins

Click to see the correct answer



With your team, create a T-Chart about an assigned topic. Jigsaw your student text as needed. Prepare to present your topic to the class.

- Snakebites – identification of types and symptoms
- Human/animal bites – dangers and symptoms
- Insect bites/stings – identification of types and symptoms
- Poisonous plants – identification of types and symptoms

Stay
in your
same
teams

Click Next to fill out the T-Chart





Insert T-Chart.swf and delete after
slicing



Reflection:

- What is the most common poisonous snake/insect/plant in our area?
- What type of lotion can help reduce itching caused by poison ivy, oak, or sumac?
- Why do you think you should learn about these outdoor injuries?

Unit 4

Wellness, Fitness, and First Aid

LESSON 9:

FIRST AID FOR BITES, STINGS, AND POISONOUS HAZARDS

Think about recognizing the symptoms of bites, stings, and poisonous plant exposure.

Process Part 1 - Now what can you do with this new information you've learned?





- With your team, present your T-Chart and topic to your class.
- Take notes on the presentations of other teams.





(U4C2L9:F4)

Animal and human bites pose a high risk of _____.

- A) rabies
- B) deadly venom
- C) allergic reactions
- D) infection

[Click to see the correct answer](#)



(U4C2L9:G7)

Name the viral disease that affects the central nervous system of mammals that is transmitted by bites and can result in paralysis and death if left untreated.

- A) Lyme disease
- B) Tetanus
- C) Lockjaw
- D) Rabies

[Click to see the correct answer](#)



Reflection:

- Have you ever been bitten by a poisonous animal?
What was it like?
- Do you think you could recognize an allergic reaction?

Unit 4

Wellness, Fitness, and First Aid

LESSON 9:

FIRST AID FOR BITES, STINGS, AND POISONOUS HAZARDS

Think about preventing injuries from poisonous snakes, insects, and plants.

Gather Part 2 - So, what else do you need to know or learn?





Insert U4C2L9_Flash 2 -Treatment.swf
and delete after slicing



Preventing Snakebites

- Use common sense when you are in an area where snakes live
- Wear protective clothing
- Walk in open areas or on paths
- Check before sitting on a rock or fallen tree
- Stay away from brush, rocks, and undergrowth





Preventing Insect Bites

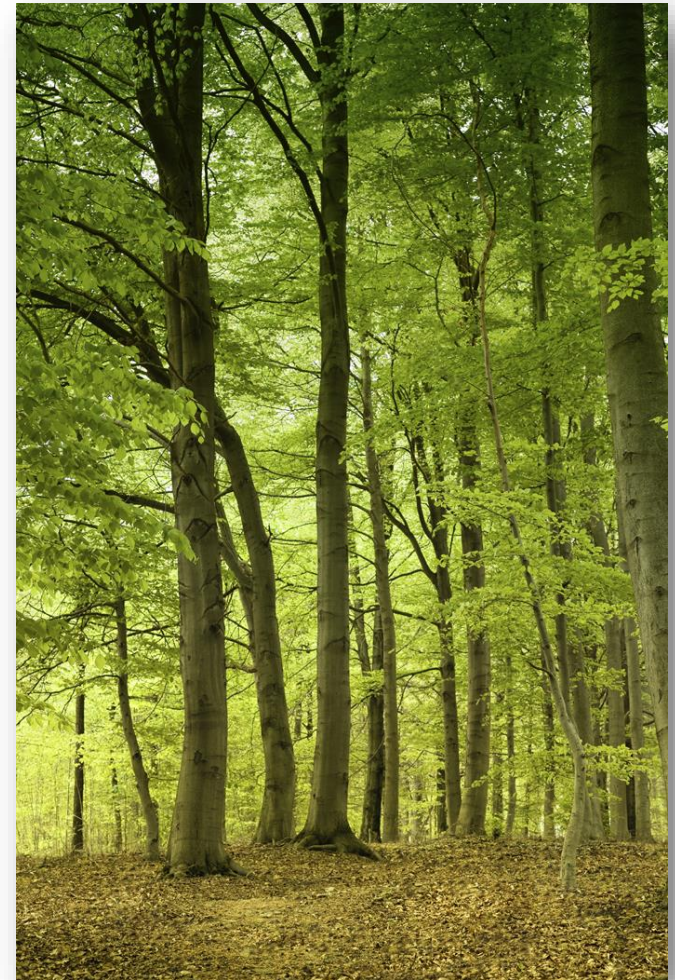
- Wear insect repellent
- Reapply repellent every few hours
- Wear protective clothing





Preventing Exposure to Poisonous Plants

- Wear protective clothing
- Do not eat plants or parts of plants unless you are certain of their safety
- Avoid areas where poisonous plants grow





(U4C2L9:G2)

What type of venom affects the nervous system and can cause death by paralysis?

- A) Antivenin
- B) Cardiotoxin
- C) Neurotoxins
- D) Hemotoxin

Click to see the correct answer



With your team, create a Flow Map showing the first aid treatment for your assigned topic. Prepare to present what you've learned to your class.

- Snakebites
- Human/animal bites
- Insect bites/stings
- Poisonous plant exposure



Click Next to fill out the Flow Map



Insert Flow Map.swf and delete after
slicing



Reflection:

- Do you think prevention of bites, stings, and poisonous plants is always practical?
- How would you react if your hiking buddy was bitten by a poisonous snake?

Unit 4

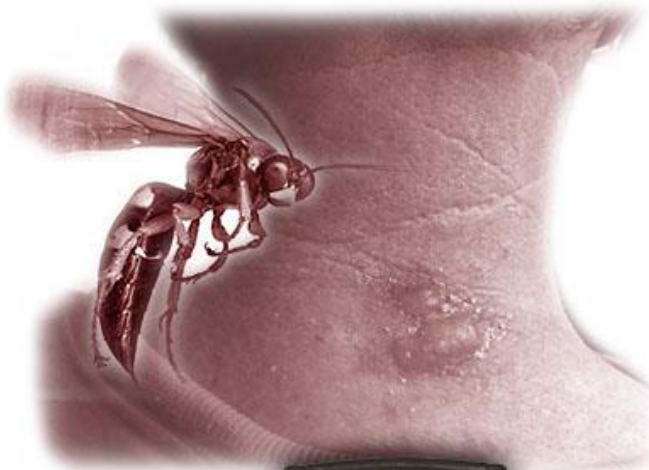
Wellness, Fitness, and First Aid

LESSON 9:

FIRST AID FOR BITES, STINGS, AND POISONOUS HAZARDS

Think about treating animal bites and poisonous plant exposures.

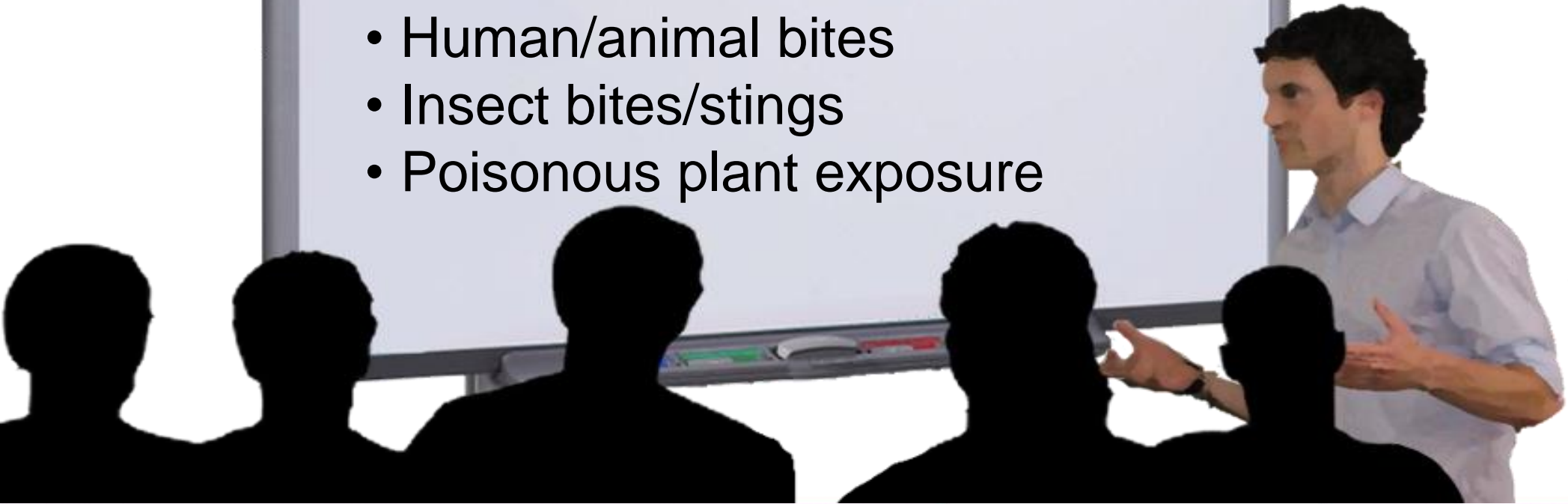
Process Part 2 - Now what can you do with this new information you've learned?





Presentations

- Snakebites
- Human/animal bites
- Insect bites/stings
- Poisonous plant exposure





(U4C2L9:Q2)

While you were helping a friend clear some sticks and leaves from behind her garage, she gets stung by something and is in extreme pain. On the way to the emergency room, you give first aid by cleaning the wound, and applying ice. After she gets treated, the doctor tells you that your quick action stopped the poison from causing severe tissue damage, and possibly gangrene, from setting in. What bit your friend?

- A) A Black Widow
- B) A Brown Recluse
- C) A Tarantula
- D) A Scorpion

[Click to see the correct answer](#)



(U4C2L9:G9)

Name a common household ingredient that can be used to make a paste to relieve pain and itching of insect bites.

- A) Flour and water
- B) Salt and water
- C) Baking soda and water paste
- D) Baking powder and water

Click to see the correct answer



Reflection:

- Why is it important to know how to identify poisonous snakes, insects, and plants?
- Why should families on vacation be concerned about bites, stings, and poisonous hazards?

Unit 4

Wellness, Fitness, and First Aid

LESSON 9:

FIRST AID FOR BITES, STINGS, AND POISONOUS HAZARDS

Think about how you can remember first aid methods for bites, stings, and poisonous hazards.

Apply - What else can you do with what you've learned today?





- Complete the “L” column on each others’ KWL charts.
- Select one Cadet to act as the recorder for each KWL chart.





Performance Assessment Task

- Complete the [First Aid for Bites, Stings, and Poisonous Hazards Performance Assessment Task](#).
- Submit your completed performance assessment task to your instructor for feedback and a grade.



Unit 4

Wellness, Fitness, and First Aid

LESSON 9:

FIRST AID FOR BITES, STINGS, AND POISONOUS HAZARDS



Insert Keywords HTML page with links to the games the
CPS questions



(U4C2L9:V1)

A pink powder called _____ consists of zinc oxide and some ferric oxide and is used in lotions and ointments.

- A) allergic reaction
- B) antivenin
- C) calamine
- D) discoloration
- E) rabies
- F) tetanus
- G) venom

[Click to see the correct answer](#)



(U4C2L9:V2)

A(n) _____ is a physical reaction, often marked by sneezing, breathing difficulties, itching, rash, or swelling, that some people have when they come in contact with certain substances.

- A) allergic reaction
- B) antivenin
- C) calamine
- D) discoloration
- E) rabies
- F) tetanus
- G) venom

[Click to see the correct answer](#)



(U4C2L9:V3)

_____ is a poison produced by animals such as snakes and spiders that is transmitted by a bite or sting.

- A) Allergic reaction
- B) Antivenin
- C) Calamine
- D) Discoloration
- E) Rabies
- F) Tetanus
- G) Venom

[Click to see the correct answer](#)



(U4C2L9:V4)

A viral disease called _____ affects the central nervous system of mammals and is transmitted by a bite from an infected animal. It can result in paralysis and death if left untreated.

- A) allergic reaction
- B) antivenin
- C) calamine
- D) discoloration
- E) rabies
- F) tetanus
- G) venom

[Click to see the correct answer](#)



(U4C2L9:V5)

_____ is an altered or changed color.

- A) Allergic reaction
- B) Antivenin
- C) Calamine
- D) Discoloration
- E) Rabies
- F) Tetanus
- G) Venom

Click to see the correct answer



(U4C2L9:V6)

An antitoxin used to counteract venom is _____.

- A) allergic reaction
- B) antivenin
- C) calamine
- D) discoloration
- E) rabies
- F) tetanus
- G) venom

[Click to see the correct answer](#)



(U4C2L9:V7)

An acute infectious disease called _____ is caused by the poison of a certain bacterium that enters the body through a wound, resulting in muscle contractions, rigidity, and death.

- A) allergic reaction
- B) antivenin
- C) calamine
- D) discoloration
- E) rabies
- F) tetanus
- G) venom

[Click to see the correct answer](#)



Reflection:

- What did you learn? (Refer to the KWL charts.)
- What worries you most about providing first aid for bites, stings, and poisonous hazards?