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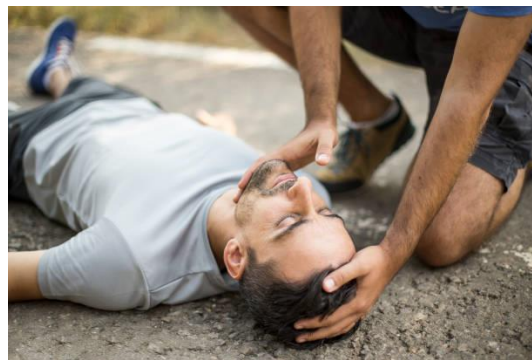
Nuture your dreams

P4 Integrated Science

term 3

THEME: Human Health

Topic 3/4: Accidents, Poisoning and First Aid.



Poisoning/Accidents at home, on the ways and at school

Type of accident	Cause	prevention
Cuts	Broken bottle, knives, panga, razor blade	Using knives, panga, axe carefully Proper disposal of broken bottles, and razor blade Wearing shoes
Burns and scalds	Fire, hot objects/water	Handle hot objects or liquids carefully
Fractures	Accidental falling, collision with cars, bicycle, motor cycle	Proper use of the road
Animal bites	Snakes, dogs, cats	Avoid moving in tall grass
Poisoning	Contaminated food	Proper reparation of food

Common cause of accidents

- Playing on the road
- Reckless driving
- Playing with sharp/dangerous objects
- Accidental falling

Exercise 1

- (i) Name two types of accidents
- (ii) List two causes of accidents

Dangers of accidents

- Pain
- Bleeding
- Fractures
- Wounds

Prevention of accidents

- (i) Follow traffic rules
- (ii) Cross the road at Zebra Crossing
- (iii) Handle sharp objects carefully
- (iv) Careful handling of hot objects
- (v) Avoiding moving barefooted
- (vi) Avoid playing with dogs and cats
- (vii) Avoid playing in bushes
- (viii) Store medicine away from children

Exercise 2

- (a) State two ways of prevention of accidents at school

Road safety rules for pupils

Activity the community can do to reduce road accidents.

- There should be Zebra crossing for pedestrian to cross safely
- Do not play on the road
- They should be road signs
- Avoid over speeding
- Putting humps in dangerous spot
- Motor vehicle should be in good mechanical condition
- Obey traffic light
- Do not drink alcohol and drive

First Aid

This is the emergency or immediate care provided to an injured or ill person until full medical treatment is available.

For minor conditions, first aid may be enough. For serious problems, first aid care should be continued until more advanced care become available.

Aims of first aid

- preserves life,
- prevents the condition from worsening,
- promotes recovery

Exercise 3

State two aims of first aid

Methods in first aid are

- **stop Catastrophic bleeding** (massive external bleeding)
- **Airway** (clearing airways)
- **Breathing** (ensuring respiration)
- **Circulation** (internal bleeding)
- **Disability** (neurological condition)
- **Environment** (overall examination, environment)

Situations that require first aid include

1. Burn and scald
2. Fractures
3. Bleeding
4. Fainting
5. Epilepsy

First Aid Kit

Should contain at least the following

- Bandages, roller bandages and tape
- Safety pins
- Sterile gauze
- Antiseptic wipes and swabs
- Absorbent compresses

- Antibiotic cream
- Burn ointment
- Mask for breathing (rescue breathing/CPR)
- Chemical cold pack
- Eye shields and eyewash
- First aid reference guide that includes local phone numbers

Exercise 4

List any two items found in first aid kit

Burns and scalds

Burns and scalds are damage to the skin caused by heat. Both are treated in the same way.

A **burn** is caused by dry heat – by an iron, naked fire, friction, electrocution, etc.

A **scald** is caused by something wet, such as hot water, hot porridge, or steam.

Burns can be very painful and may cause:

- red or peeling skin
- blisters
- white or charred skin
- swelling



Treating burns and scalds

To treat a burn, follow the first aid advice below:

- Immediately get the person away from the heat source to stop the burning
- Cool the burn with cool or lukewarm running water for 20 minutes – don't use ice, iced water, or any creams or greasy substances such as butter, cow dung, soil, cooking oil.
- remove any clothing or jewelry that's near the burnt area of skin, including babies' nappies - but don't move anything that's stuck to the skin
- make sure the person keeps warm – by using a blanket, for example, but take care not to rub it against the burnt area
- cover the burn by placing a layer of cling film over it – a clean plastic bag could also be used for burns on your hand
- use painkillers such as paracetamol or ibuprofen to treat any pain
- if the face or eyes are burnt, sit up as much as possible, rather than lying down - this helps to reduce swelling

Preventing burns and scalds

Many severe burns and scalds affect babies and young children. Examples of things you can do to help reduce the likelihood of your child having a serious accident at home include:

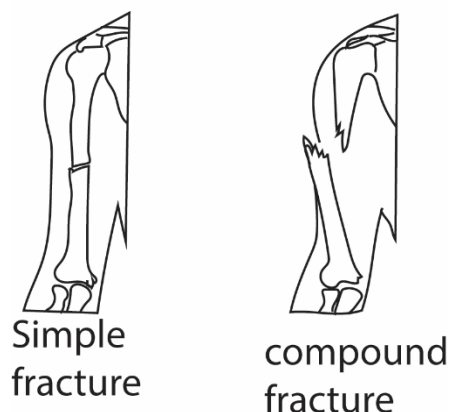
- keeping your child out of the kitchen whenever possible
- testing the temperature of bath water using your elbow before you put your baby or toddler in the bath
- keeping matches, lighters and lit candles out of young children's sight and reach
- keeping hot drinks well away from young children

Bone fractures

A **bone fracture** is a medical condition in which there is a partial or complete break in the continuity of a bone.

Types of fractures

Types of fractures



1. Simple or closed fracture

This is a fracture where a broken bone does not pierce the skin

2. Open or compound fracture

is broken bone pierce the form a wound that communicated with the bones. This may expose the bones to contamination.

Open injuries carry a higher risk of infections.

What are the symptoms of a broken bone?

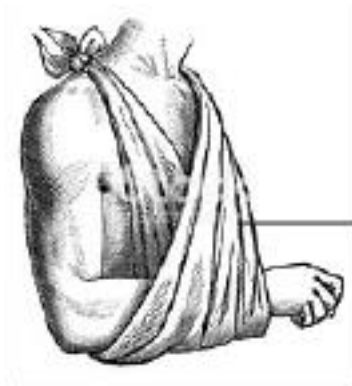
A broken bone can cause one or more of the following signs and symptoms:

- intense pain in the injured area that gets worse when you move it
- Numbness in the injured area
- bluish color, swelling, or visible deformity in the injured area
- bone protruding through the skin
- heavy bleeding at the injury site

First Aid for fractures

If you suspect that someone has a broken bone, provide first-aid treatment and help them get professional care:

- **Stop any bleeding:** If they're bleeding, elevate and apply pressure to the wound using a sterile bandage, a clean cloth, or a clean piece of clothing.
- **Immobilize the injured area:** If you suspect they've broken a bone in their neck or back, help them stay as still as possible. If you suspect they've broken a bone in one of their limbs, immobilize the area using a **splint or sling**.



Arm sling



Splint

- **Apply cold to the area:** Wrap an ice pack or bag of ice cubes in a piece of cloth and apply it to the injured area for up to 10 minutes at a time.
- **Treat them for shock:** Help them get into a comfortable position, encourage them to rest, and reassure them. Cover them with a blanket or clothing to keep them warm.
- **Get professional help:** Call 112 on cellular phone or 999 on landline phone or help them get to the emergency department for professional care.

Cuts and wounds



1. Stop Bleeding

- Apply direct pressure on the cut or wound with a clean cloth, tissue, or piece of gauze until bleeding stops.
- If **blood** soaks through the material, don't remove it. Put more cloth or gauze on top of it and continue to apply pressure.
- If the wound is on the arm or leg, raise limb above the **heart**, if possible, to help slow bleeding.
- **Wash your hands** again after giving **First Aid** and before cleaning and dressing the wound.
- Do not apply a tourniquet unless the bleeding is severe and not stopped with direct pressure.



2. Clean Cut or Wound

- Gently clean with soap and warm water. Try to rinse soap out of wound to prevent irritation.
- Don't use **hydrogen peroxide or iodine**, which can damage tissue.

3. Protect the Wound

- Apply antibiotic cream to reduce risk of infection and cover with a sterile bandage.
- Change the bandage daily to keep the wound clean and dry.

4. When to Call a Doctor

- The wound is deep or the edges are jagged or gaping open.
- The wound is on the person's face.
- The wound has dirt or debris that won't come out.
- The wound shows signs of infection, such as redness, tenderness, or a thick discharge, or if the person runs a fever.
- The area around the wound feels numb.
- Red streaks form around the wound.
- The wound is a result of an animal or human bite.
- The person has a puncture wound or deep cut and hasn't had a **tetanus shot** in the past five years, or anyone who hasn't had a tetanus shot in the past 10 years.
- Bleeding is severe
- You suspect **internal bleeding**
- There is an abdominal or chest wound
- Bleeding can't be stopped after 10 minutes of firm and steady pressure
- Blood spurts out of wound
- **Fainting** occurs

Fainting

Fainting, or syncope, is a sudden and temporary loss of consciousness. This usually occurs due to a lack of oxygen reaching the brain.

Fainting is not usually serious. However, sometimes it can indicate a serious medical issue. People should treat every case of fainting as a medical emergency until they have uncovered the cause and treated the symptoms.

When a person faints, they may:

- fall over or slump
- appear unusually pale
- have reduced blood pressure and a weak pulse

Possible triggers of fainting include

- an unpleasant or shocking image, such as seeing blood
- sudden exposure to an unpleasant sight or experience
- abrupt emotional upset, such as after receiving tragic news
- extreme embarrassment
- standing still for a long time
- being in a hot and stuffy environment for a long time
- taking pressure drugs
- dehydration
- diabetes

First Aid for fainting person

- Lie the individual down on their back.
- If they are breathing, raise their legs about 12 inches above heart level to restore blood flow to the brain.



- Try to loosen all belts, ties, collars, and other forms of restrictive clothing.
- When the person regains consciousness, do not let them get up too quickly.
- If they remain unconscious for more than about a minute, put them in the recovery position and get emergency medical help.

Fits or seizure

About 1 in 10 people may have a seizure during his or her lifetime. This means seizures are common, and one day you might need to help someone during or after a seizure

These are general steps to help someone who is having any type seizure:

- Stay with the person until the seizure ends and he or she is fully awake. After it ends, help the person sit in a safe place. Once they are alert and able to communicate, tell them what happened in very simple terms.
- Comfort the person and speak calmly.
- Check to see if the person is wearing a medical bracelet or other emergency information.
- Keep yourself and other people calm.
- Offer to call a taxi or another person to make sure the person gets home safely.
- Ease the person to the floor.
- Turn the person gently onto one side. This will help the person breathe.
- Clear the area around the person of anything hard or sharp. This can prevent injury.
- Put something soft and flat, like a folded jacket, under his or her head.
- Remove eyeglasses.
- Loosen ties or anything around the neck that may make it hard to breathe.
- Time the seizure. Call 112 if the seizure lasts longer than 5 minutes.

Never do any of the following things

- Do not hold the person down or try to stop his or her movements.
- Do **not** put anything in the person's mouth. This can injure teeth or the jaw. A person having a seizure cannot swallow his or her tongue.
- Do **not** try to give mouth-to-mouth breaths (like CPR). People usually start breathing again on their own after a seizure.
- Do **not** offer the person water or food until he or she is fully alert.

Snake bites

Most snakes aren't dangerous to humans however their some snake bite bites can cause severe injuries and sometimes death.

If a venomous snake bites you, call 999 or 112 your local emergency number immediately, especially if the bitten area changes color, begins to swell or is painful. Many emergency rooms stock antivenom drugs, which may help you.

If possible, take these steps while waiting for medical help:

- Move beyond the snake's striking distance.

- Remain still and calm to help slow the spread of venom.
- Remove jewelry and tight clothing before you start to swell.
- Position yourself, if possible, so that the bite is at or below the level of your heart.
- Clean the wound with soap and water. Cover it with a clean, dry dressing.
- Note the snake appearance

Caution

- Don't use a tourniquet or apply ice.
- Don't cut the wound or attempt to remove the venom.
- Don't drink caffeine or alcohol, which could speed your body's absorption of venom.
- Don't try to capture the snake. Try to remember its color and shape so that you can describe it, which will help in your treatment. If you have a smartphone with you and it won't delay your getting help, take a picture of the snake from a safe distance to help with identification.

Exercise 4

Give one first aid measures in the following conditions

- (i) Burn
- (ii) Fractures
- (iii) Cut
- (iv) Faint

Fire

Basically, fire is light and heat that comes from a special kind of chemical reaction such as burning

Four elements, also known as the fire tetrahedron, must be present in order for a fire to exist.

These fire tetrahedron include:

- Oxygen.
- Heat.
- Fuel.
- Chemical reaction.

When you remove one of the four elements, the fire can then be extinguished.

Fire prevention at school and homes: 5 tips to keep everyone safe

It is now common to hear the news of a burnt school or home.

The probable cause of the fire being identified as an electrical short circuit, burning candles, forgotten sigri burning and so on.

This is why it's important to take fire safety very seriously and to take careful measures to avoid the outbreak of fire in schools.

Check electrical appliances

Any devices in a building that have a plug should be checked periodically to ensure they are in good working order. This includes any electrical tools and appliances, even those brought in by teachers that don't necessarily belong to the school.

Check all fire safety equipment

Legally, all school buildings must be equipped with a sufficient number of fire extinguishers and/or hoses. It's important that this equipment is maintained and checked regularly.

Implement a fire-free zone

Have a designated area for teachers who smoke, equipped with the appropriate cigarette disposal containers. This will avoid cigarette butts being neglected in places where a fire could break out.

Signs for safety

Ensure that your school has the correct and sufficient signage to direct people to fire extinguishers and fire exits. Each classroom should have a map showing the path to take from that classroom should an incident occur.

Have an escape plan

Even with the proper checks and policies in place, accidents can and do happen. If a fire were to break out at school, is everyone aware of the procedure to escape or evacuate? Additionally, is all the emergency lighting operational, and are the fire escape stairs always clear? Hold regular fire drills so that everyone is aware of their roles and the evacuation procedure.

Action on fire outbreak

What to do if there is a fire in your home or school

You should follow your escape plan and get out immediately. You should:

- Make an alert to everyone like vocal alarm “fire”: get together and take your planned route out
- If there is smoke in the air, stay low to the ground, especially your head, to reduce inhalation exposure. Keep on hand on the wall to prevent disorientation and crawl to the nearest exit.
- feel doors before opening: if warm, don't open them as the fire is on the other side
- shut all doors behind you on the way out
- never use lifts
- leave valuables and pets
- meet at your agreed point
- stay outside: **NEVER** go back in the burning building to rescue pets or valuables
- call 999 immediately and wave down the fire engines when they arrive

Methods of fighting fire outbreak

Never attempt to fight fire which is beyond your ability

1. Pour water on fire

NB. Water cannot put out fire caused by petrol because petrol floats on water and continue burning

2. Pour sand
3. Use fire extinguishers. Some of these contain inflammable dense gases such as carbon dioxide and tetrachloromethane. The gases displace oxygen from burning objects and stop the fire.

Drowning

Drowning is the process of experiencing respiratory impairment from submersion/immersion in liquid.

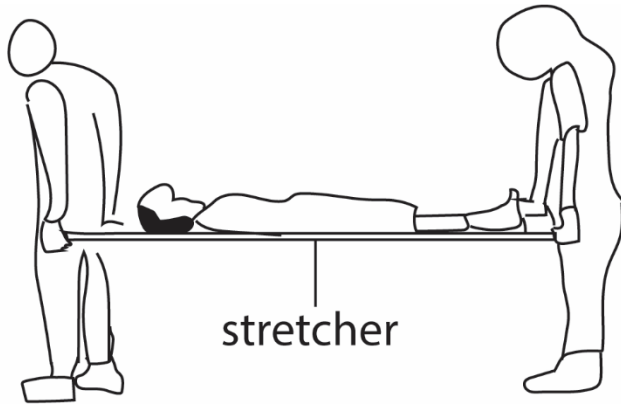
Drowning may lead to sicken or death

What to do

1. Make an alarm and call for help
2. Do not put yourself in danger when trying to rescue a casualty.

Stretcher

In first Aid, a stretcher is a device used to carry a person who must lie flat and can't move on their own. It takes two strong people to carry a patient on a stretcher.



Exercise 5

- (i) Name one cause of fire
- (ii) Name one way of putting out fire

Exercise 6

1. A boy bleeding from the nose is made to lie down or sit on a chair with his nose upwards. What should be done next to stop bleeding?

Pitch the nose to stop bleeding

2. What is a compound fracture?

A compound fracture is where broken bone pierce the skin to form a wound that communicated with the bones.

3. What First Aid should be given to a person with a compound fracture on the arm?

Stop bleeding

Immobilize with splint or arm sling

4. A child suddenly removed the cover of a saucepan full of boiling water. One arm of the child was burnt with steam.

(a) What kind of burn did the child get?

Scald

(b) What First AID would you give to the child?

Pour cold water not ice

(c) Give the possible ways by which such accidents could be avoided?

Keep children from the kitchen or hot objects

5. (a) Why should water not be used to put out fire from petrol which is burning?

- **Water contain oxygen that supports burning**
- **Petrol float on water and continue to burn.**

(a) Suggest two ways by which fire from petrol burning can be put out.

Using carbon dioxide fire extinguisher

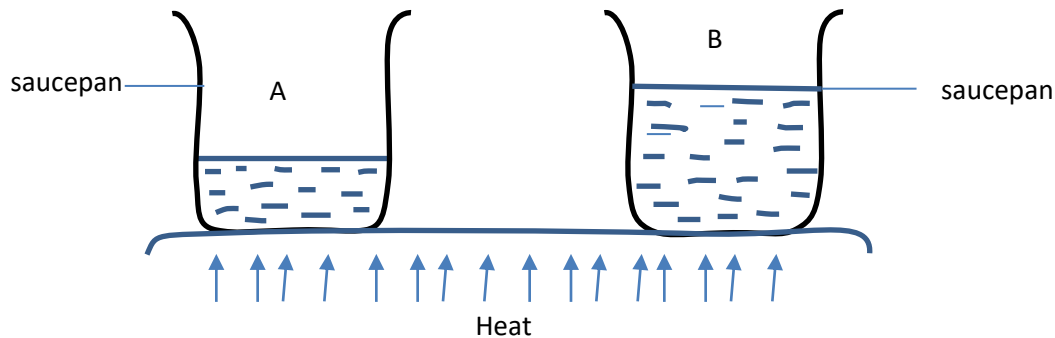
Covering with blanket

Pouring sand

6. Which First Aid would you give to a person who has a burn by fire?

Pour cold water to burnt area to reduce the effect of burn

7. Two containers A and B containing some water as in the diagram below, were heated.



(a) In which container did water boil first?

A

(b) Explain your answer in (a) above.

Has less water that require less heat energy to boil

8. (a) State one way in which you can distinguish between a poisonous snake and a nonpoisonous one

- Poisonous snakes has fangs while nonpoisonous snake does not have fangs

(b) Give an example of a poisonous snake.

Cobra

Puff adder

Black mamba

(c) What First Aid is given to a person bitten by a poisonous snake?

Take the person to hospital

Put a black stone to absorb poison

9. What First Aid would you give to a person who is bleeding through the nose?

Make a person lean forward and pitch the nose to stop bleeding

10. (a) Give two reasons why First Aid is given to a patient.

To prevent further injury

To minimize pain

To promote recovery

To reduce bleeding

(b) State two reasons why proper medical prescription is necessary before taking any medicine.

11. State any one way in which the First Aid for a cut is different from First Aid for a burn.

First Aid for cut is to stop bleeding with a bandage while the first aid for a burn is to reduce pain by putting in cold water

12. If your friend accidentally pours hot milk on his/her hand, what First Aid would you give him or her.

Put the hand in cold water or pouring water to injured hand.

13. Why it is important to look left, right then left again before crossing the road?

To prevent motor accidents

14. Why is it not advisable to use water to put off fire caused by petrol?

Petrol floats on water and continues to burn

15. (a) What is first Aid?

First treatment given to an injured person before being taken to hospital

(b) Why would it be dangerous for a boy of 11 years to try to remove an adult, who is near drowning, from water?

May also fall and drawn in water

(c) Suggest two things the boy in (b) above should do to save the adult from drowning.

Call for help

Throw closed empty jerry can into water to enable the drowning person to float on water

16. Give one sign you would use to identify a compound fracture.

Bone breaks and come out of the skin



17. What is near drowning?

Near drowning is when a person swallows water in a water body, become unconscious but does not die

18. (a) What is the use of First Aid box?

To store First AID tools

(b) What is meant by drug abuse?

Take unprescribed drugs that put a person's life in danger

(c) Give any two pieces of advice to a person who is on drug abuse.

- (i) **Sensitize him/her on the bad effect of drug abuse**
- (ii) **To get activities that can keep him busy during his/her free time.**
- (iii) **To take him to rehabilitation centre.**

19. (a) What first aid will you give to an accident victim?

Check the person's pulse whether is still alive or not.

Stop bleeding

Put a splint to broken part of the body.

(b) Explain how you will administer first aid nose bleeding.

- (i) **pitch the nose to stop bleeding**
- (ii) **bend the head forward**
- (iii) **Breath through the mouth.**

20. What can be done to lower the temperature of a person with high fever?

Using a tepid sponge or a wet sponge in lukewarm water

21. Peter water put gout fire caused by petrol but the continued Burning. Suggest one thing he should have used to put off the fire.

- (i) **Fire extinguisher,**
- (ii) **By pouring sand on to the fires**

22. (a) Why is it important to feel the pulse (heart beat) of a seriously injured victim of an accident?

To determine whether the victim is alive or dead

(b) What can a small boy or girl do when his or her older sister falls into water?

Make an alarm

(c) Why is it dangerous to cause a victim who has swallows paraffin to vomit it?

Vomiting can cause paraffin enter the lungs and causing death

Vomiting may cause dehydration

(d) Why is First Aid given?

Prevent further damage

To preserve life

23. What First Aid would you give to a person whose finger has been burnt by fire?

Put the burnt finger in cold water

49. You are running home with your friend after school and one of your friends accidentally falls down and his thigh bone breaks

(a) What do we call the injury he got?

Fracture

(b) Give two things you will do to give him First Aid

Applying a splint around the broken bone area

Prevent movements

Stop bleeding

(c) What would you prepare to enable you carry him properly

Stretcher

24. (a) Why should water not be used to put out a fire caused by petrol?

Petrol floats on water and continues to burn

Water contain oxygen that supports burning

(b) Suggest any two ways in which such a fire can be put out.

Using fire extinguisher

Using sand or soil

Use blanket

(c) How is a burn different from a scald?

A burn is caused by naked fire flames or hot object while a scald is caused by hot water or steam

25. What is a stretcher useful in giving First Aid?

It is used to carry casualty to the health center

26. John fell off a bicycle and broke his thigh bone.

(a) Name the injury which John got.

A fracture

(b) State any two ways in which John can be given First Aid.

(i) apply a splint at the broken area

(ii) give a pain killer

(c) What is the importance of giving first Aid to a person like John?

- **Reduce pain**

- **Prevent injury from worsening**

27. (a) Why is it a bad practice to apply soil or cow dung on any burnt area of our skin?

They may contain germs

They do not reduce the heat from the burn

(b) Suggest any two reasons why the injured part with a burn or scald is dipped into cold water.

To cool the burnt place

To minimize the effect of the burn

(c) Give any one way of avoiding burns while lifting hot objects.

Use pieces of paper or cloth

28. Suggest any one use of a tourniquet.

It is tied tightly around the arm to reduce bleeding from a cut or injury.

29. Give one activity the community can do to reduce road accidents.

There should be Zebra crossing for pedestrian to cross safely

They should be road signs

Avoid over speeding

Putting humps in dangerous spot

30. Give one reason why people who get badly burnt are given plenty of fluids

To prevent dehydration

To replace water lost in fluids

31. (a) What is First Aid?

First Aid is the first help given to a casualty (accident victim) before being taken to a health center or hospital for treatment.

(b) List any two things found in a first Aid box.

Bandage

Scissor

Plaster

Pain killers like Panadol and diclofenac

Cotton

Spirit

Razor blade

(c) State why every school should have a First Aid box.

- to handle emergency cases in order to reduce on the extent of injury

- to save life in case of overbreeding

32. Give one way in which the cause of a scald is similar to that of a burn.

Both injuries are caused by heat energy

33. State one types of accidents whose First Aid is to put the affected part of the body in cold water.

Burn or scald

34. Why are the legs of a person who has fainted raised higher than the head as a way of giving first aid?



Raising legs allows more blood supply to the brain

35. What kind of accident requires the use of splints in giving First Aid?

Fracture

36. Why tepid sponging is an important First Aid to a person with high fever?



A tepid sponge reduces body temperature. It is a cloth with lukewarm water.

37. Why should cold water be poured on the part of the body which has been scalded or burnt?

To cool the place and reduce further damage

38. State the injury caused by steam to human body.

Scald

39. (a) What causes fainting

Low oxygen supply to the brain

(b) State any two conditions that can lead to fainting

Standing for long time

Sad news

Shock

Fatigue

(c) Why the legs of a person who fainted are raised higher than the head when giving First Aid?

To increase blood (oxygen) flow to the brain

40. State any sign compound fracture?

Broken bone come out of the skin

Bleeding

Thank You

Dr. Bbosa Science