Week: One

Class: Primary Three

Topic: Revision of Air

Behavioural objectives: At the end of the lesson, pupils should be able to:

1. describe wind as air in motion.
2. describe their feelings when wind blows against their bodies.
3. explains the effects of air.
4. lists the uses of air

Instructional material/Reference material: Pieces of paper, Feathers, Pictures of wind mill, Pictures/charts showing the effects of wind.

Building Background /connection to prior knowledge: pupils are familiar with the air in their environment.

Content: Air

Air: is define as breeze; a gentle win, it is understood as a gaseous mixture of nitrogen, oxygen, and various trace gases or Air is an invisible form of matter that flows freely and is in the gaseous state.(usually) The apparently open space above the ground which this substance fills, (historical) formerly thought to be limited by the firmament now considered surrounded by the near vacuum of outer space. It can be felt.

TYPES OF AIR

1. Cold Air -: which is found anywhere behind a cold front. When a cold front moves through an area the temps rapidly drop especially during the late fall and early spring.

2. Warm Air -: warm air which is best found behind a warm front. When a warm front moves through an area the temps will gradually warm from the South to the North.

3. Moist Air -: This air is best defined as having moisture present in it. Anything greater than 1% would be described as being moist. The best places to find this type of air is along the Southeast part of the United States due to the moisture from the Gulf of Mexico.

4. Dry Air -: Dry air is described as having less than 1% of moisture in it. The best location to find this type of air is in the Southwest part of the United States and also in the Middle East.

EFFECTS OF AIR

1. Air cause rain or dew to dry more quickly thus reducing the risk of fungal infection.

2. Air also affects the thermal conditions of a vineyard i.e it reduces heat.

3. Air also support combustion i.e it helps fire to burn quickly and easily.

4. When it is blown in the night it feels cool in the body.

5. When blown in the day it feels hot or warm in the body especially in the Northern area.

USES OF AIR

1. It is a significant supplier of energy -: all living plants and animals depend on oxygen to generate valuable energy.

2. It is a conducting medium for sound -: we can hear the sound of speech or noise, etc. only when there is the air around us. It happens because the wind is a good

sound conductor. Without a medium, we will not be able to hear anything and won't be able to produce the sounds.

3. It is responsible for the pollination of crops: plants produce male gametes in pollen grains. These pollen grains move from the male flower to the female flower and combine with female gametes, which is called pollination. This may occur in flowers growing on the same plant or between remote plants with the help of wind or air power.

4. It keeps the balance of the temperature on the Earth's surface when it's summer. When the sun strongly heats the Earth's surface, the surface temperature of the ground is growing rapidly, but it grows slowly on the surface of the ocean or sea (this is because a solid substance is heated faster than liquid water). Thus, the air that is warmed at the Earth's surface rises up, and the cold one from the sea surface transfers to the surface of the ground which minimizes the temperature rise.

5. It helps in drying (moisture balance): the ground being wet from the rain dries due to air. On a wet surface, it is very moist. Thus, the moist layers are replaced by less humid or dry layers of air. The new dry layer on the surface absorbs moisture from the wet surface, and the cycle continues until the surface is dry.

Evaluation: The teacher asked questions on what has been taught.

1. describe wind as air in motion.

2. describe their feelings when wind blows against their bodies.

3. explains the effects of air.

4. lists the uses of air

Week: Two

Class: Primary Three

Topic: Ways of contacting substance in the Air

Behavioural objectives: At the end of the lesson, pupils should be able to:

1. discuss air as a mean through which harmful substances are taken into the body.

2. explains environmental pollution.

3. explains how harmful substances are carried into the air by smoking.

4. explains how harmful substance are carried into the air by swallowing contaminated water.

Instructional material/Reference material: Unmaintained toilets in the school and soaker ways in the localities, Pictures and charts of people smoking, Pictures of children drinking contaminated water.

Building Background /connection to prior knowledge :pupils are familiar with the air, it effects and uses

Content: Ways of contacting substance in the Air

There are diverse of ways of contaminating substance in the air;

1. By environmental pollution.

2. By smoking.

3. By swallowing contaminated water.

1. ENVIRONMENTAL POLLUTION: Environmental pollution is defined as "the contamination of the physical and biological components of the earth/atmosphere system to such an extent that normal environmental processes are adversely affected.

2. SMOKING: During smoking carbon monoxide/carbon(1) oxide is released to the air which reduces level of oxygen and it affect breathing and in which the smoker is liable to die young. In addition, the longer you are around secondhand smoke, the greater the level of harmful substances in your body. As a result, you might have an increased risk of developing smoking-related disorders, including: Lung cancer and lung disease,

3. SWALLOWING CONTAMINATED WATER: Infectious diseases can be spread through contaminated water. Some of these water-borne diseases are Typhoid, Cholera, Paratyphoid Fever, Dysentery, Jaundice, Amoebiasis and Malaria. Chemicals in the water also have negative effects on our health.

Evaluation:The teacher asked questions on what has been taught.

1. discuss air as a mean through which harmful substances are taken into the body.

2. explains environmental pollution.

3. explains how harmful substances are carried into the air by smoking.

4. explains how harmful substance are carried into the air by swallowing contaminated water.

Week: Three

Class:Primary Three

Topic: Example of diseases/sickness caused by harmful substance

Behavioural objectives:At the end of the lesson, pupils should be able to:

1. explains the meaning of disease/sickness

2. discuss examples of diseases and sickness caused by harmful substances.

3. explains symptoms and prevention of diseases and sickness.

4. explains treatment of the diseases/sickness.

Instructional material/Reference material: Pictures or charts of someone sick caused by harmful substances, Visit to a nearby clinic

Building Background /connection to prior knowledge :pupils are familiar with the ways of contacting substance in the environment the it effects.

Content: Diseases and sickness

DISEASES: An abnormal condition of a human, animal or plant that causes discomfort or dysfunction. This always occur through the infections of virus, bacteria and fungi and the invisible organisms in the environment. Sickness is symptoms of diseases.

SICKNESS: is the quality or state of being sick or diseased; illness. Someone can be sick without disease infection this may be shown due to over labour or rise in temperature or the humidity of an environment and the pollution.

Examples of diseases are: cancer, gonorrhea, ebola, Corona, elephantiasis.

Examples of sickness are: malaria, headache, stomachache, dysentery.

PREVENTION OF DISEASES AND SICKNESS

1. Maintain personal hygiene.

2. Clean and sterilize your tools after use.

3. Go to the hospital for medical check-up.

4. Wash your wears always and avoid pilling up when used or dirty.

5. Keep your toilet and bathroom clean to avoid infection.

6. Eat fresh food and fruit and the balance diet.

SYMPTOMS OF DISEASES AND SICKNESS

1. Symptoms of lung problems include coughing up blood, shortness of breath, difficulty breathing, chronic cough, repeated bouts of bronchitis or pneumonia, and wheezing.

2. Symptoms of stomach or digestive problems include rectal bleeding, blood in the stool or black stools, changes in bowel habits or not being able to control bowels, constipation, diarrhea, heartburn or acid reflux, or vomiting blood.

3. Symptoms of skin problems include changes in skin moles, frequent flushing and redness of face and neck, jaundice, skin lesions that don't go away or heal, new growths or moles on the skin, and thick, red skin with silvery patches.

4. Symptoms of headache problems (not including everyday tension headaches) include headaches that come on suddenly, "the worst headache of your life," and headache associated with severe dizziness, nausea, vomiting, and inability to walk.

5. Symptoms of bladder problems include difficult or painful urination, frequent urination, loss of bladder .

PREVENTIONS

1. Get restful sleep.

2.Don’t miss health screenings and vaccinations.

3.Quit smoking.

4.Manage blood sugar levels.

5.Watch your body mass.

6.Watch your blood pressure.

7. Make healthy food choices.

TREATMENT OF DISEASES AND SICKNESS

1. Use of medical drugs.
2. Taking of injections.
3. Eating of balance diet.
4. Body diagnosis.

Evaluation:The teacher asked questions on what has been taught.

1. explains the meaning of disease/sickness
2. discuss examples of diseases and sickness caused by harmful substances.
3. explains symptoms and prevention of diseases and sickness.
4. explains treatment of the diseases/sickness.

Week: Four

Class:Primary Three

Topic: Water (water quality)

Behavioural objectives: At the end of the lesson, pupils should be able to:

1. list the qualities of good water.
2. sources of good water.
3. explains the sources and qualities of bad water.

4. enumerate the qualities of good water.

5. enumerate the qualities of bad water.

Instructional material/Reference material:

Building Background /connection to prior knowledge :pupils are familiar with

Content: Water

WATER: water is refer to a liquid substance or clear liquid substance.it is present naturally as rain, and found in rivers, lakes and seas; its solid form is ice and its gaseous form is steam.

SOURCES OF GOOD WATER

Sources where water may be obtained include:

1. Ground sources such as groundwater, springs, hyporheic zones and aquifers.

2. Precipitation which includes rain, hail, snow, fog, etc.

3. Biological sources such as plants.

Desalinated seawater.

Water supply network.

SOURCES OF BAD WATER

1. Water gotten from gutter

2. Water gotten from the sea

3. Water gotten from erosions and flood.

QUALITIES OF GOOD WATER

1. Contaminant free
2. Mineral rich
3. Most be hundred percent pure and clean
4. Good taste.
5. Odourless

QUALITIES OF BAD WATER

1. Iritative odour
2. Dirty in colour
3. Contains germs
4. Taste poor

Evaluation:The teacher asked questions on what has been taught.

1. list the qualities of good water.
2. sources of good water.
3. explains the sources and qualities of bad water.
4. enumerate the qualities of good water.
5. enumerate the qualities of bad water.

Week: Five

Class:Primary Three

Topic: Water quality

Behavioural objectives:At the end of the lesson, pupils should be able to:

1. explains how water is contaminated.
2. state the dangers of drinking bad water.
3. importance of drinking good water.
4. explains ways and how to avoid drinking bad water.

Instructional material/Reference material: Samples of sand,Urine, Dust, Chemicals

Building Background /connection to prior knowledge :pupils are familiar with water, it quality and it effects.

Content:

Contamination of water: This is when Substance or particles are added to water to make it impure, hazardous, dangerous and undrinkable for human being.

Danger of drinking bad water

1. It cause vomiting
2. It cause diarrhea
3. It cause sick stomach or stomach upset
4. It cause cholera

GOOD WATER

Drinking Water Helps Maintain the Balance of Body Fluids. Your body is composed of about 60% water. The functions of these bodily fluids include digestion, absorption, circulation, creation of saliva, transportation of nutrients, and maintenance of body temperature.

Benefits of Drinking Good Water

1. Increases Energy & Relieves Fatigue. Since your brain is mostly water, drinking it helps you think, focus and concentrate better and be more alert.

2. Promotes Weight Loss.

3. Flushes Out Toxins.

4. Improves Skin Complexion.

5. Maintains Regularity.

Ways of avoiding the drinking of bad water

1. Filter the water before drinking

2. Boil the water and let it cool before drinking

3. Cover your water to avoid contaminant in the water.

Evaluation: The teacher asked questions on what has been taught.

1. explains how water is contaminated.

2. state the dangers of drinking bad water.

3. importance of drinking good water.

4. explains ways and how to avoid drinking bad water.

Week: Six

Class: Primary Three

Topic: Substance that contaminate water

Behavioural objectives: At the end of the lesson, pupils should be able to:

1. identify and name some substances that make water unfit for drinking.
2. explains how dead and decaying animals contaminate water
3. explains how contaminate water.
4. discuss how dumping of refuse in rivers contaminate water.

Instructional material/Reference material: Charts showing ways water can be contaminated, Water contaminated with dust, sand particles

Building Background /connection to prior knowledge: pupils are familiar with water contaminant

Content:

How decay plant and animal contaminate water:

When plants and animals die, they settle to the bottom. Under normal conditions this causes the water body to gradually fill with sediment and organic material and it makes it smell and stink because germs and worms are sedimented and settled in it.

How leaking pipe and underground water contaminate water:

Leaky pipes can allow contaminants into our drinking water. ... The pressure in mains water pipes usually forces water out through leaks, preventing anything else from getting in. But when there is a significant pressure drop in a damaged section of pipe, water surrounding the pipe can be sucked in through the hole. Underground water contamination occurs when man-made products such as gasoline, oil, road salts and chemicals get into the groundwater and cause it to become unsafe and unfit for human use. ... For example, pesticides and fertilizers can find their way into groundwater supplies over time.

How human waste contaminate water:

Human excreta,urine and the lack of adequate personal and domestic hygiene have been implicated in the transmission of many infectious diseases including cholera, typhoid, polio. This really leads to contamination of water which called water disease/water borne disease.

How dumping of refuse in the river contaminate water:

Organic waste (e.g., wood wastes) can have chemical and biological impacts on rivers and streams. Among the many impacts are interfering with the establishment of aquatic plants, affecting the reproductive behavior of fish and other animals, and depleting the water of dissolved oxygen as the wastes decompose.

Evaluation: The teacher asked questions on what has been taught.

1. identify and name some substances that make water unfit for drinking.
2. explains how dead and decaying animals contaminate water
3. explains how contaminate water.

4. discuss how dumping of refuse in rivers contaminate water.

Week: Seven

Class:Primary Three

Topic: Water Purification (Making water fit for drinking)

Behavioural objectives: At the end of the lesson, pupils should be able to:

1. explains the meaning of purification of water.
2. describe how distillation process can purify water.
3. explains the meaning and ways of filtration.
4. explains boiling of water a method of purifying water.
5. name and explain how to keep the sources of water clean.

Instructional material/Reference material: Alum Disinfectant e.g. Izal, Dettol, TCP, Miltton solution, Muddy water, Container, Clean white cloth, Stove.

Building Background /connection to prior knowledge: pupils are familiar with Substance that contaminate water.

Content:

Distillation of Water: Distilled water is water that has been boiled into vapor and condensed back into liquid in a separate container. Impurities in the original water that do not boil below or near the boiling point of water remain in the original container. Thus, distilled water is one type of purified water. A water distillation

system is designed to purify water cheaply, quickly and effectively. To distill water, all you really need is a heat source .

Water Filtration: Water filtration is a general term that refers to any system or process that is used to filter out particles and pollutants. Water filtration is the process of removing or reducing the concentration of particulate matter,including suspended particles, parasites, bacteria, viruses, and fungi, as well as other undesirable chemical and biological contaminants from contaminated water to produce safe and clean water for a specific purpose.

Boiling of water: Boiling water means that on heating water has reached maximum temperature and temperature of water cannot be raised further or The process of changing the state of a substance from liquid to gas by heating it to its boiling point.

Sources of water:

1. Rain
2. Well
3. Tap
4. Spring
5. Lake
6. River
7. Sea
8. Ocean

How to keep the source of water clean

1. Handle and dispose of waste properly:

- Reduce your waste production

-Use local hazardous waste collection programs

- Pick up pet waste

2. Maintain heating oil tanks and fill lines:

- Inspect your oil tank regularly

- Upgrade to a modern fuel tank

- Install a drip pan and oil line/gauge protectors

3. Maintain and use septic systems properly:

- Know the location of your tank and septic beds and protect it from damage

- Have the tank pumped out every three to five years

- Conserve water

Avoid the use of bleach/harsh cleaning products

4. Maintain wells:

- Inspect your well at least once a year

- Keep potential pollutants (i.e. livestock, septic systems, fuel sources, gardens) away from your well

- Test your well water regularly for bacterial contamination

5. Practice water conservation:

- Use a rain barrel to water your garden

- Install low flow shower heads and toilets

- Fix leaking taps

6. Use green products for:

- Household cleaning

- Personal care

- Lawn care

How Distillation process can purify water:

Distillation relies on evaporation to purify water. Contaminated water is heated to form steam. Inorganic compounds and large non-volatile organic molecules do not evaporate with the water and are left behind. The steam then cools and condenses to form purified water.

How to purify water by boiling:

Boil water, if you do not have bottled water. Boiling is sufficient to kill pathogenic bacteria, viruses and protozoa (WHO, 2015). If water is cloudy, let it settle and filter it through a clean cloth, paper boiling water towel, or coffee filter. Bring water to a rolling boil for at least one minute.

Evaluation: The teacher asked questions on what has been taught.

1. explains the meaning of purification of water.

2. describe how distillation process can purify water.

3. explains the meaning and ways of filtration.

4. explains boiling of water a method of purifying water.

5. name and explain how to keep the sources of water clean.

Week: Eight

Class:Primary Three

Topic: Making water fit for drinking (Filtration)

Behavioural objectives:At the end of the lesson, pupils should be

able to:

1. explains and name some chemicals for filtering.
2. describe ways of filtering.
3. explains the changes that occur when alum is put in water.

Instructional material/Reference material:Sieve cloth, Coloured water e.g. muddy water, Basin, Disinfectants e.g. TCP, Dettol, Alum, Charts.

Building Background /connection to prior knowledge: pupils are familiar with water Purification

Content:

Filtration: The act or process of filtering; the mechanical separation of a liquid from the undissolved particles floating in it. Filtration is the process of separating suspended solid matter from a liquid, by causing the latter to pass through the pores of some substance, called a filter. The liquid which has passed through the filter is called the filtrate.

Process of filtration

Filtration. Water flows through a filter designed to remove particles from within it. The filters are made of layers of sand and gravel, and in some cases, crushed anthracite. Filtration collects the suspended impurities in water, enhancing the effectiveness of disinfection.

Evaluation

1. explains and name some chemicals for filtering.
2. describe ways of filtering.
3. explains the changes that occur when alum is put in water.

Week: Nine

Class:Primary Three

Topic: Things about water

Behavioural objectives:At the end of the lesson, pupils should be able to:

1. explains and name things about water
2. explain the process of condensation.
3. explain water as solvent
4. describe the practical work on the water project.

Instructional material/Reference material:Stove, water (boil the water until it evaporates from the kettle), Sun- Water to be kept in an intensive sun heat for evaporation.

Building Background /connection to prior knowledge :pupils are familiar with filtration and it process.

Content:

Water condensation: Condensation is the process by which water vapor in the air is changed into liquid water. Condensation is crucial to the water cycle because it is responsible for the formation of clouds.

Water as a solvent

Water is capable of dissolving a variety of different substances, which is why it is such a good solvent. And, water is called the "universal solvent" because it dissolves more substances than any other liquid. ... This allows the water molecule to become attracted to many other different types of molecules.

Evaluation: The teacher asked questions on what has been taught.

1. explains and name things about water
2. explain the process of condensation.
3. explain water as solvent
4. describe the practical work on the water project.

Week: Ten

Class:Primary Three

Topic: More about water purification

Behavioural objectives:At the end of the lesson, pupils should be able to:

1. practicalize
2. practical.

Instructional material/Reference material:Stove, Water, Sieve cloth, TCP

Building Background /connection to prior knowledge: pupils are familiar with water condensation and it process.

Content: WATER PURIFICATION

Ways of water purification

BOILING: Boiling is sufficient to kill pathogenic bacteria, viruses and protozoa (WHO, 2015). If water is cloudy, let it settle and filter it through a clean cloth, paperboiling water towel, or coffee filter. Bring water to a rolling boil for at least one minute.

FILTRATION: Filtration is the process of separating suspended solid matter from a liquid, by causing the latter to pass through the pores of some substance, called a filter. The liquid which has passed through the filter is called the filtrate. Water flows through a filter designed to remove particles from within it. The filters are made of layers of sand and gravel, and in some cases, crushed anthracite. Filtration collects the suspended impurities in water, enhancing the effectiveness of disinfection.

ADDITION OF ALUM: Alum (aluminum sulfate) is added to the water to destabilize natural fine particulate matter suspended in water. This process in known as coagulation. ... The addition of alum causes these particles and colloids to clump or gather together to form heavier particles which will settle under water.

ADDITION OF DISINFECTANT: Disinfection kills or removes diseases (pathogens) from drinking water, reducing health risks. You can disinfect water by adding

chemicals, using heat, using ultraviolet (UV) radiation, filtration, alum, distillation, or using a combination of these methods.

Evaluation: The teacher asked questions on what has been taught.

1. practicalize
2. practical.