BUDHA DAL PUBLIC SCHOOL, PATIALA
TERM - I LESSON PLAN-1
CLASS – VII SUBJECT – SCIENCE (CHEMISTRY)
SESSION – 2021-22(MONTH-APRIL)

TOPIC— WATER : A PRECIOUS RESOURCE

CLASS TRANSACTION : 10 Periods (approx.40 min each)

OBJECTIVES :

- To explain the importance of water for all living organisms.
- To provide information about the distribution of water in nature.
- To discuss reasons of water scarcity on the earth.
- To teach students about the methods of conservation of water.

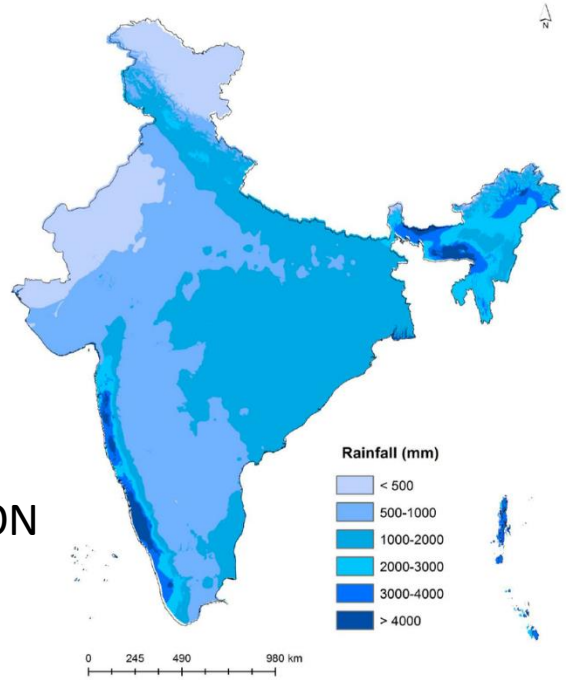
PREVIOUS KNOWLEDGE TESTING :

Questions to be asked …

- Where is salty water present on Earth?
- What are three forms of water?
- Name the steps of water cycle.

IMPORTANT SPELLINGS :

Inexhaustible, Excretion, Aeration, Chlorination, Aquifer, Digestion, Excretion, Infiltration, Depletion, Unpredictable, Impervious.

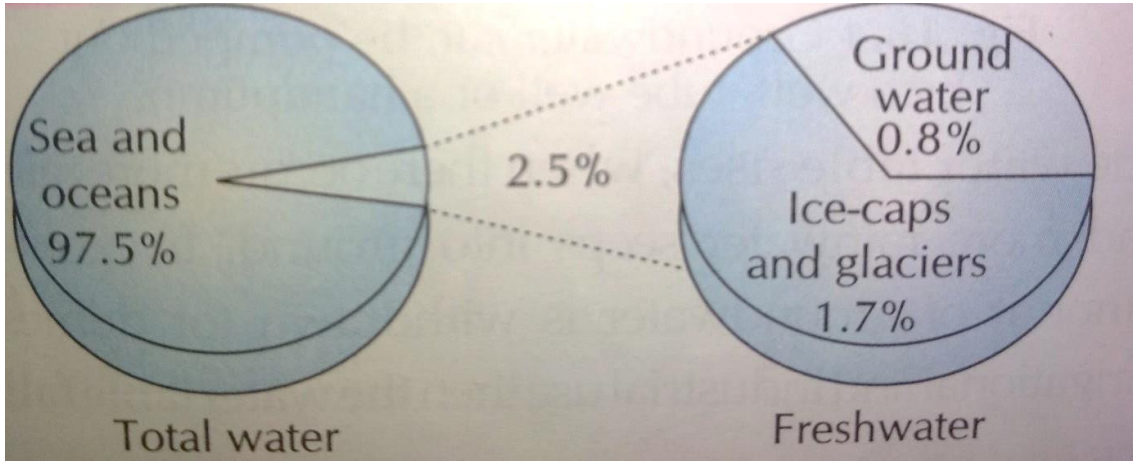


INNOVATIVE PEDAGOGIES:

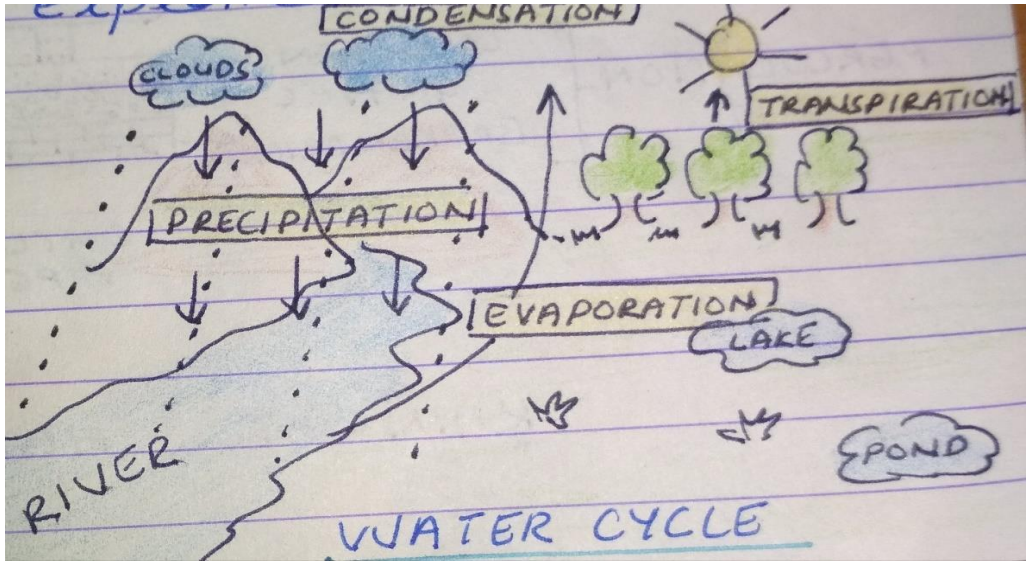
- Explanation of distribution of water in the SMART CLASS (Source-Extramarks).
- The students will be shown video about the Production of Hydroelectricity (https://youtu.be/OC8Lbyeyh-E)
- Videos regarding The Traditional System of BAWRI-Indian Stepwells for collecting rainwater (https://youtu.be/MGZScEptL6E) and Modern Method of Water Conservation like DRIP IRRIGATION (https://youtu.be/Ds8UPalws28) will be shown.
- MAP WORK :The students will fill areas having excessive rainfall and areas prone to drought on outline Map of India to study about uneven distribution of water in India.
- They will draw poster on water conservation in the class.
- Making of concept maps and flow charts.

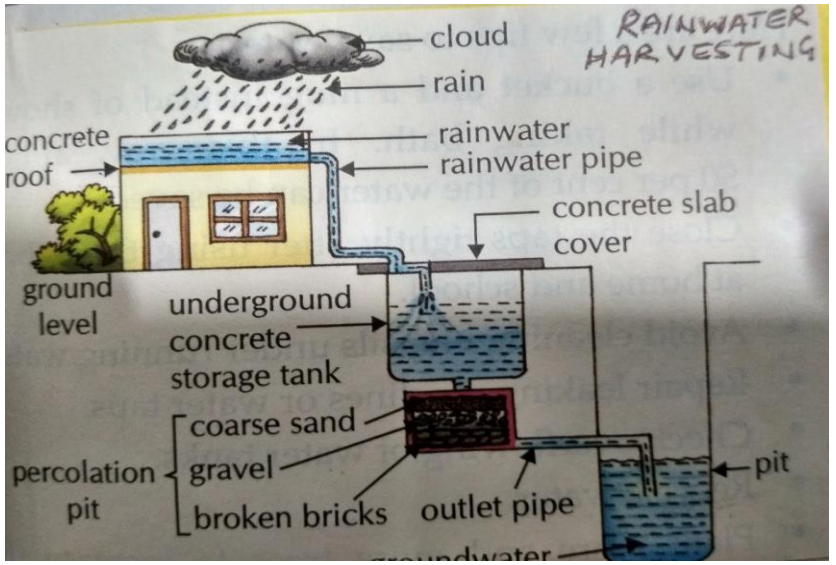
PROCEDURE :

- The types of natural resources with examples will be explained.
- The distribution of water on earth will be explained in the form of percentage.
- Various sources of water, purification of water and terms related to groundwater as an important source will be discussed briefly.



- Various factors leading to depletion of water table like increase in population, increase in industries, agricultural activities, deforestation, scanty rainfall and decrease in effective area of seepage of water will be discussed.
- The three forms of water –SOLID(ice), LIQUID(water), GASEOUS(water vapour) will be explained and water cycle will be discussed in the smart class.





- The method of rainwater harvesting, its types and advantages will be shown in the smart class.
- With the help of video, the revival of Bawris to solve the problem of water scarcity will be discussed.
- The technique of Drip irrigation will be discussed in the smartclass.
- The effects of water scarcity will be discussed in detail.
- Revision of various subtopics will be taken up in the class(MCQ, short questions, definitions, reason based questions, diagrams) and NCERT Exemplar questions will be discussed .

PARTICIPATION OF STUDENTS :

- The students will draw the diagram of distribution of water in the class.
- They will fill areas having excessive rainfall and scanty rainfall on the outline map of India.

- The students will write the definitions of infiltration, groundwater, water table and aquifer in their notebook.
- The students will draw the diagram of water cycle and label various steps of water cycle.
- They will speak on the topic –Advantages of Rainwater Harvesting & draw its well labelled diagram.
- The students will perform activity in groups on topic- Drip irrigation with the help of plastic bottles in school.

- The students will enlist the points to save water at home.
- A discussion will be held in the class and they will suggest various measures to avoid wastage of water.
- They will draw the poster on water conservation in the class & fill areas receiving high rainfall and areas receiving scanty rainfall on the outline map of India.
- They will actively answer the questions, draw diagrams, solve MCQ's & objective questions in the class.

RECAPITULATION :

- Where are solid, liquid and gaseous forms of water found in nature?
- Why does earth appear blue from space?
- Why do places like Cherrapunji face shortage of water inspite of receiving highest amount of rainfall in the world?

- How is drip irrigation helpful to farmers?
- When is World Water Day celebrated and why?
- How much water is recommended by United Nations per person per day for daily needs?
- How is rainwater harvesting beneficial to us?

ASSIGNMENTS :

- List various uses of water in our daily life with pictures.
- To write a case study along with pictures about any one traditional system of collecting rain water in dry areas.
- Survey of school campus in groups to find reasons of leakage of water and suggest measures to be taken to prevent wastage of water in school/locality.

RESOURCES :

- NCERT Exemplar
- Learning Science (Cordova Publications)
- Extramarks smart class , Homework app for MCQ/assignments
- Videos (https://youtu.be/MGZScEptL6E) (https://youtu.be/Ds8UPalws28) (https://youtu.be/NEJUBVK4MQo)

ART INTEGRATION AND OTHER DOMAINS :

- Poster making (ART EDUCATION)
- Map work(SOCIAL SCIENCE)
- Distribution of water in percentage form (MATHS)

INNOVATIVE PEDAGOGIES :

- Hands on learning experience by the students while performing water conservation activity at small scale in school campus.
- Visual lab to teach about three forms of water
- Making of concept maps and flow charts.

Co-SCHOLASTIC ACTIVITIES :

- Critical thinking will be developed while comparing sources of water on the basis of geography of a region.
- Thinking and decision making skills will be developed during survey and class discussions.
- While performing activity in the groups, the students will develop communication skills, team spirit and appraise the role of people in conserving water.

LEARNING OUTCOMES :

- The students will be able to summarize significance of water in real life.
- They will be able to distinguish various sources of water, discuss about them in group and judge them for availability.
- They will be able to draw labelled diagrams of distribution of water, water cycle & rainwater harvesting.
- They will be able to conduct simple investigation or collect information to seek answers to queries about uneven distribution of water and water conservation methods.

BUDHA DAL PUBLIC SCHOOL, PATIALA

TERM - I LESSON PLAN-2

CLASS – VII SUBJECT – SCIENCE (CHEMISTRY)

SESSION – 2021-22(MONTH-MAY)

TOPIC - FORESTS : OUR LIFELINE

CLASS TRANSACTION : 10 Periods (approx.40 min each)

OBJECTIVES :

- To discuss about the variety of life forms in forests.
- To provide information about various layers of forest.
- To explain occurrence of various food chains in an ecosystem.
- To impart knowledge about interdependence between plants and animals.
- To explain the importance and conservation of forests.

PREVIOUS KNOWLEDGE TESTING : Questions to be asked….

- Can you name any decomposer?
- Do the animals help in pollination?
- Name the gas released by plants during photosynthesis.

IMPORTANT SPELLINGS :

Canopy, Understorey, Orchids, Jaguars, Leopards, Lichens, Millipedes, Sheesham, Cinchona, Taxol, Turpentine, Eucalyptus, Humus, Conservation, Pesticides, Afforestation, Van Mahotsava

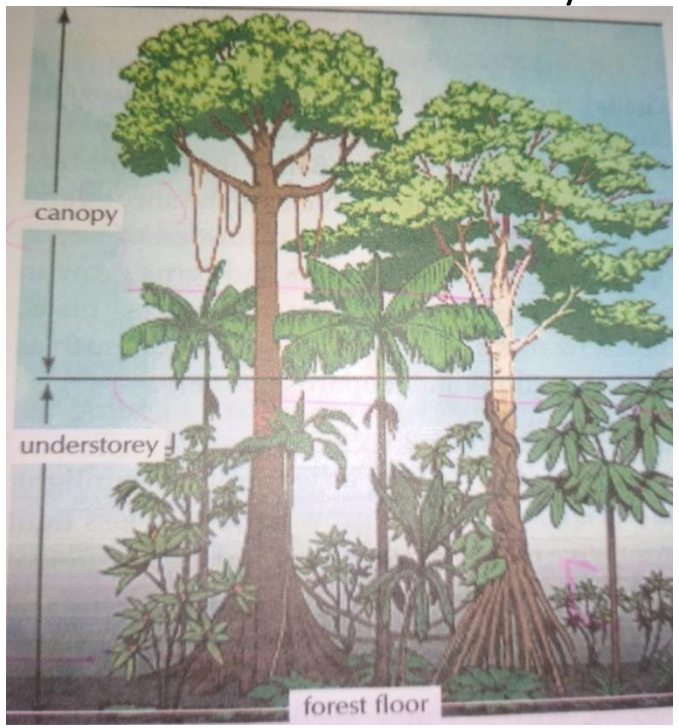
INNOVATIVE PEDAGOGIES:

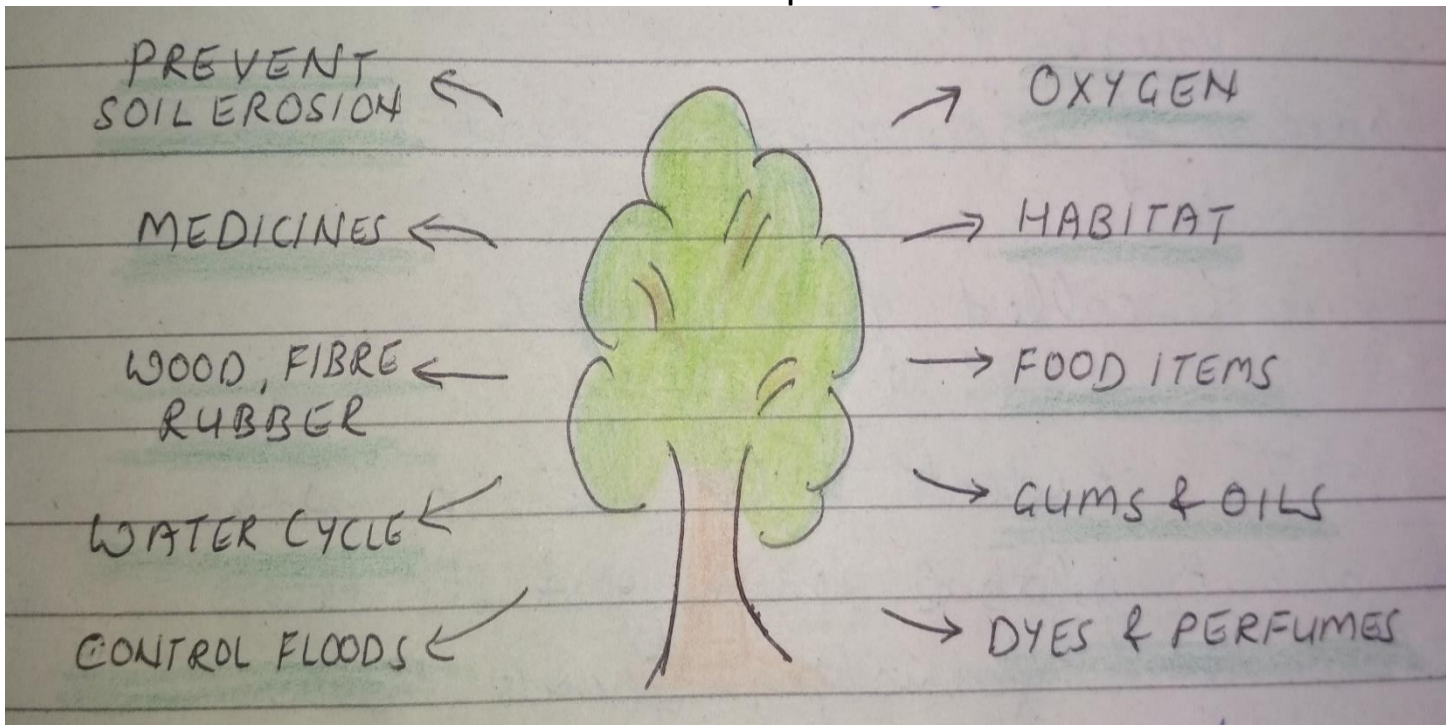
- Use of smart class (Source- Extramarks) to show various layers of forests and medicinal uses of trees and plants.

- Video will be shown to explain the concept of Global Warming (https://www.youtu.be/x_sJzVe9P_8)
- Debate on – How forests help to decrease various types of pollution (Air, water, land and noise pollution).
- Video will be shown on the topic Flow of Energy – Food Chain and Food Web (https://www.youtu.be/hLq2datPo5M)
- Poster making in class- Importance of Forests and Saving Trees.
- Making of concept maps and flow charts.

PROCEDURE :

- Various horizontal layers formed in the forest – canopy, understorey, forest floor will be explained in the smart class.
- The role of decomposers, importance of food chain, food web, will be explained with examples.
- Various uses of forests in our daily life will be discussed in the smartclass with the help of video.





- The causes and effects of deforestation will be discussed in details by citing various examples.
- The ways of conservation of forests will be explained highlighting the importance of Van Mahotsava.
- Revision of various subtopics will be taken up(MCQ, short questions, definitions, reason based questions, diagrams) and NCERT Exemplar questions will be discussed.

PARTICIPATION OF STUDENTS :

- The students will draw diagrams of various layers of forests and food chains.
- The students will draw poster on – Importance of forests- in the class and paste it in their notebook.
- The students will participate actively during class discussions, answer the questions and clarify their doubts.

RECAPITULATION :

- How do plants and animals depend on each other in a forest?
- How does absence of tress of forest lead to soil erosion and floods?
- Why are forests called green lungs in nature?
- What is the role of decomposers in the forest?

ASSIGNMENTS :

- The students will collect more information about global warming and its causes/effects.
- They will collect information about the work done by environmentalists like Sunder Lal Bahuguna, and write in their notebook.
- They will prepare for the debate in groups highlighting how forests help in reducing various types of pollution.
- Project on – Medicinal Plants and their Uses

RESOURCES :

- NCERT Exemplar
- Leaning Science (Cordova Publication)
- Extramarks smartclass, Homework app for MCQ/assignments
- Videos (https://www.youtu.be/hLq2datPo5M) (https://www.youtu.be/x_sJzVe9P_8)

ART INTEGRATION AND OTHER DOMAINS :

- Poster making (Art education)
- Case study about environmentalists (Social Science)

INNOVATIVE PEDAGOGIES :

- The students will be guided how to enact in the role play on interdependence between plants and animals.
- PPT will be shown about various environmentalists and their contribution towards saving of forests will be highlighted.
- Planting of trees in July month by the children.
- Making of concept maps and flow charts.

Co-SCHOLASTIC ACTIVITIES:

- Students will develop thinking and decision making skills by discussing importance of plants and animals.
- They will think critically about various environmental issues and will show kindness towards animals.

LEARNING OUTCOMES :

- The students will be able to enlist various animals and plants found in various layers of forests.
- They will be able to find answers to queries about interdependence of plants and animals and importance of plants and trees in our daily life.
- They will be able to analyse various food chains and conclude that energy is transferred from one organism to other in the form of food.
- They will be able to apply the need of conservation of plants in their home and society by celebrating Van Mahotsava - tree plantation drive in their locality.

BUDHA DAL PUBLIC SCHOOL, PATIALA
TERM - I LESSON PLAN-3

CLASS – VII SUBJECT – SCIENCE (CHEMISTRY)

SESSION – 2021-22(MONTH-JULY)

TOPIC :PHYSICAL AND CHEMICAL CHANGES

CLASS TRANSACTION : 10 Periods (approx. 40 min each)

OBJECTIVES :

- To discuss about various physical and chemical changes occurring in our daily life.
- To make them understand about the changes caused during a chemical reaction and a physical change.
- To explain the causes of rusting and the damage done by it.
- To impart knowledge about various methods of prevention of rusting.

PREVIOUS KNOWLEDGE TESTING : Questions to be asked….

- Can we obtain milk back from curd ?
- Do the wooden pieces remain same after burning ?
- What does the seed change into after germination ?
- What does water change into if we keep it in refrigerator ?

IMPORTANT SPELLINGS:

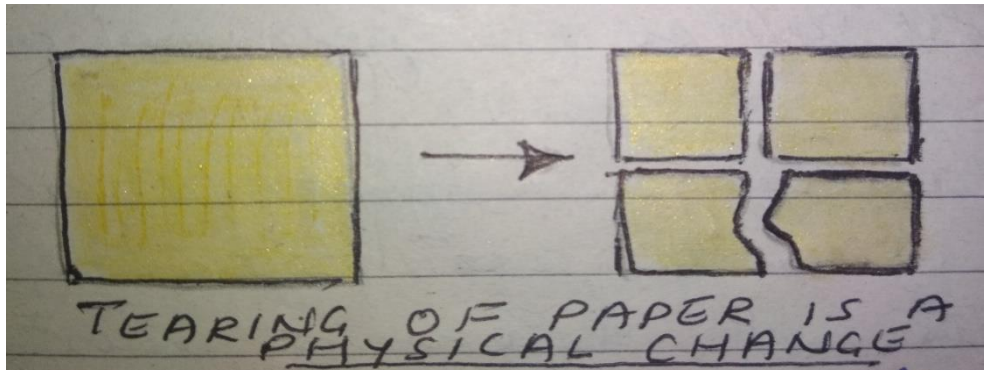
Irreversible, Stretching, Magnetisation, Hammering, Magnesium, Reactants, Products, Precipitate, Exothermic, Endothermic, Electrolysis, Displacement, Rusting, Galvanisation, Alloying, Crystallisation.

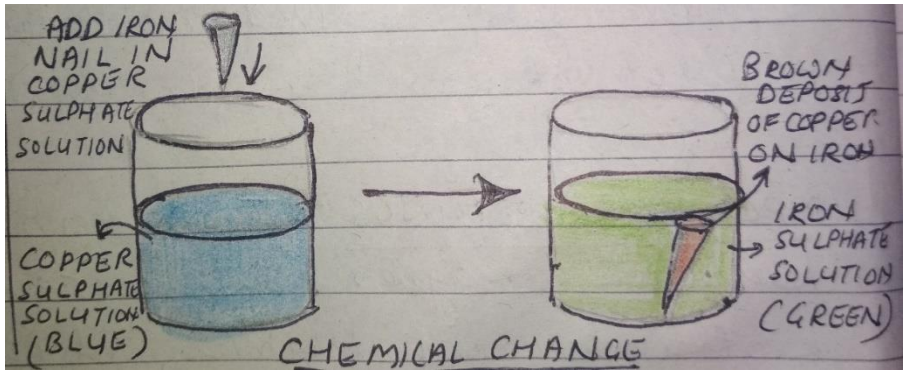
INNOVATIVE PEDAGOGIES:

- Various physical and chemical changes will be discussed in the smart class (Source-Extramarks) and a video will be shown to discuss more examples (https://youtu.be/BgM3e8YZxuc)
- Activity to explain physical changes like tearing of paper will be performed.
- Chemical reactions will be shown in virtual lab or some of them will be performed in chemistry lab.
- The video on topic Rusting-its causes and prevention will be shown (https://youtu.be/jQoE_9x37mQ)
- Galvanisation process will be discussed with the help of video (https://youtu.be/ZXvLLljBMvo)
- Making of concept maps and flow charts

PROCEDURE :

- The difference between reversible and irreversible changes will be explained with the help of examples.
- The properties of physical and chemical changes will be discussed in the smart class and various activities will be performed in the class.





- Various types of chemical reactions (combination , decomposition, displacement, double displacement reactions) will be discussed briefly.
- The process of rusting , its necessary conditions and effects of rusting will discussed.
- Various methods to prevent rusting will be shown in smart class /video.
- The method of crystallisation will be shown in the virtual lab.
- Revision of various subtopics will be taken up(MCQ, short questions, definitions, reason based questions, diagrams) and NCERT Exemplar questions will be discussed.

PARTICIPATION OF STUDENTS :

- The students will record observations of various activities and analyse the result of those changes.
- They will collect pictures of various methods of prevention of rusting and paste them in their notebook . They will also speak about these methods in groups in the class.
- Quiz will be conducted in the class on various physical and chemical changes.
- The students will actively participate in various discussions, answer questions and also clear their doubts during revision.

RECAPITULATION :

- What are the conditions necessary for rusting of iron ?
- How can you say that burning of candle is a physical as well as chemical change ?
- Which alloy is used in making of utensils ?
- What are applications of galvanisation process ?

ASSIGNMENTS :

- The students will enlist various characteristics of physical and chemical changes with examples in their notebook.
- The students will collect old coins of different metals at their home and observe colour changes in those coins.
- They will write an article on pollution caused due to explosion of fire crackers. The effects of that chemical change and various types of pollution caused by it will be discussed along with effects on health of human beings and animals.

RESOURCES :

- NCERT Exemplar
- Learning Science (Cordova Publications)
- Extramarks smartclass, Homework app for MCQ/assignments
- Videos (https://youtu.be/BgM3e8YZxuc) (https://you.be/ZXvLLljBMvo) (https://you,be/jQoE_9x37mQ)

ART INTEGRATION AND OTHER DOMAINS :

- Colour changes in different coins (Art Education).
- Different types of pollution caused by burning of crackers (Environmental education).

INNOVATIVE PEDAGOGIES :

- Hands on learning activities about various changes will be performed in the class.
- Some chemical reactions will be shown in Visual Lab.
- The students will depict harmful effects of noise pollution due to burning crackers in the form of short play or mime.
- Making of concept maps and flow charts.

Co-SCHOLASTIC ACTIVITIES :

- The students will develop team spirit while performing activities in the groups.
- They will develop decision making skills while adopting the method of prevention of rusting.
- They will think critically about the harmful effects of various chemical changes in the environment.

LEARNING OUTCOMES :

- The students will be able to conduct simple investigations to classify whether the change is physical or chemical.
- They will be able to write the word equations for some chemical reactions
- They will be able to relate the phenomenon of rusting with its effects on the economy of the nation.
- They will be able to apply the scientific concepts in day-to-day life and will take measures to prevent rusting & pollution.

BUDHA DAL PUBLIC SCHOOL

TERM –II LESSON PLAN-1

CLASS-VII SUBJECT-SCIENCE (CHEMISTRY)

SESSION – 2021-22(MONTH-OCTOBER)

TOPIC – WASTE WATER STORY

CLASS TRANSACTION :10 Periods (approx.40 min each)

OBJECTIVES :

- To explain the harmful effects of sewage.
- To provide knowledge about various contaminants present in the sewage.
- To teach students about various steps of waste water treatment.
- To make them aware about better house keeping practices and how to maintain sanitation at public places.

PREVIOUS KNOWLEDGE TESTING : Questions to be asked…..

- Name some disease causing microbes.
- What is the use of water in our daily life ?
- Which animal is used in vermicomposting method ?
- Name any disease caused by water pollution.

VOCABULARY & IMPORTANT SPELLINGS :

Sewage, sewer, poisonous, contaminants, accumulation, diarrhoea, cholera, dysentery, jaundice, eutrophication, pavement, screening, grit, sludge, clarified, aeration, anaerobic, sanitation, skimmer, municipality.

INNOVATIVE PEDAGOGIES :

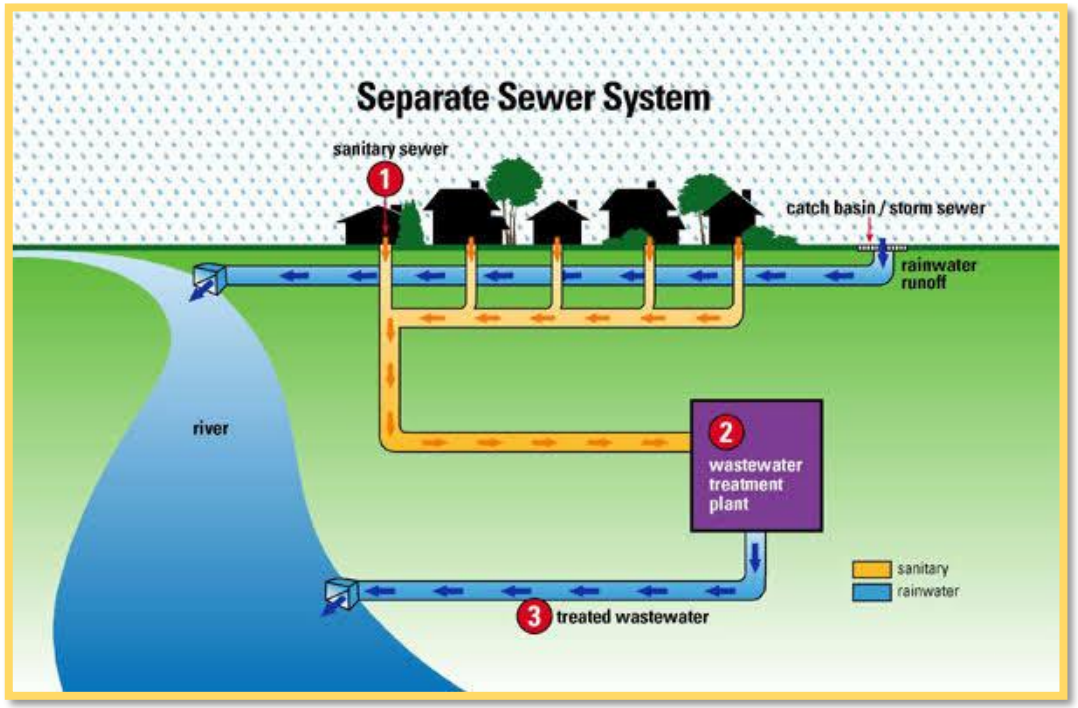
- Explanation of major sources of wastewater in the smart class (Source-Extramarks).
- Activity to purify water.
- Poster making on sanitation at public places or better house keeping practices.
- The students will be shown video related to wastewater treatment plant (https://youtu.be/_MvYIZ_niYY)
- Eutrophication process will be explained with the help of videos (https://youtu.be/UGqZsSuG7ao) (https://youtu.be/mLbDbmmV6Qc)
- Making of concept maps and flow charts.

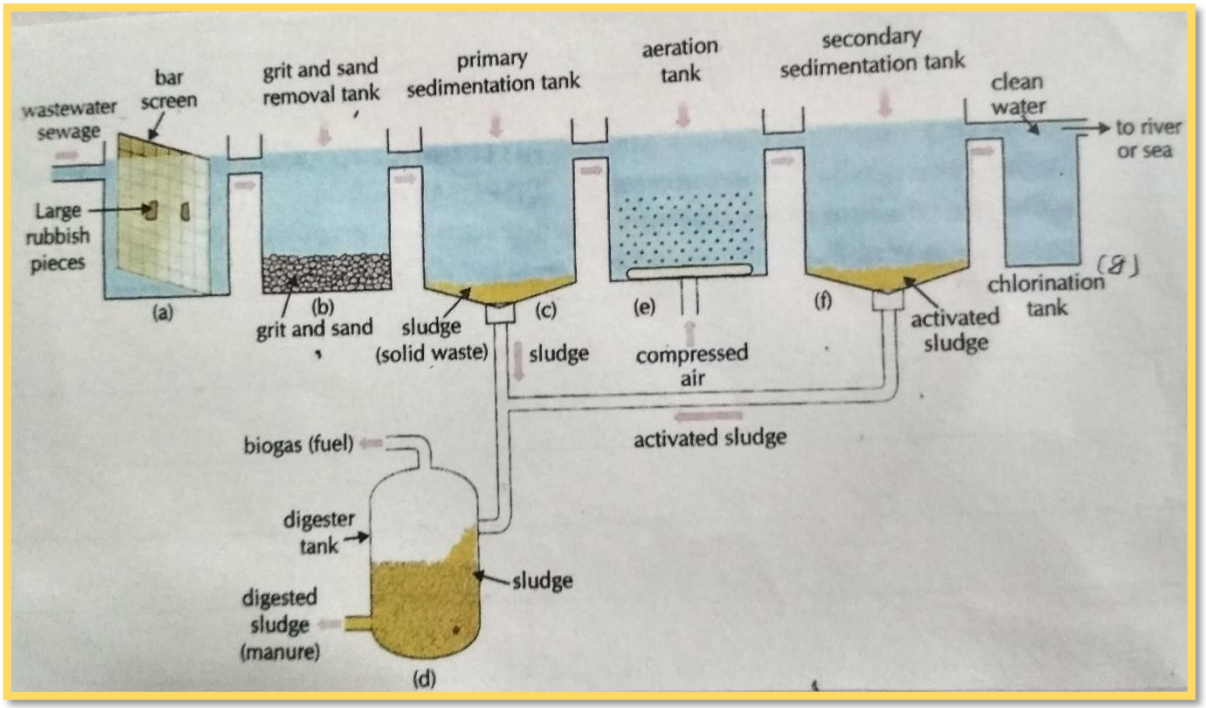
PROCEDURE :

- The sources of wastewater and contaminants present in the sewage will be discussed in the smart class.
- Harmful effects of sewage like spreading of diseases and water pollution will be discussed.
- Various stages of treatment of sewage in wastewater treatment plant will be shown in the smart class or video and uses of Biogas as by product will be discussed.
- The process of eutrophication ,its causes and effects will be discussed with the help of video.
- Discussion regarding the use of low cost onsite sewage disposal systems will be done with the help of pictures and videos in the smartclass.
  - -SEPTIC TANK
  - -BIOGAS PLANT
  - -VERMICOMPOSTING TOILETS
- The students will be advised to follow better house keeping practices like avoid throwing of fats, oils, tea leaves, solid food, paint, solvents, medicines in the drain. They should adopt sanitation practices at public places.
- Revision of various subtopics will be taken up in the class(MCQ, short questions, definitions, reason based questions, diagrams) and NCERT Exemplar questions will be discussed.

PARTICIPATION OF STUDENTS :

- The students will draw the diagrams of sewerage system and wastewater treatment plant in their notebooks.





- They will speak on the topic -Why manholes are provided in sewer pipelines ?
- They will participate in the discussion on the topic-Health hazards caused due to open drains and stagnant water.
- They will write definitions of important terms like aeration, activated sludge, chlorination, clarified water, eutrophication.
- They will draw poster on sanitation practices in the class.
- They will actively answer the questions, draw diagrams, solve MCQ's and objective questions in the class.

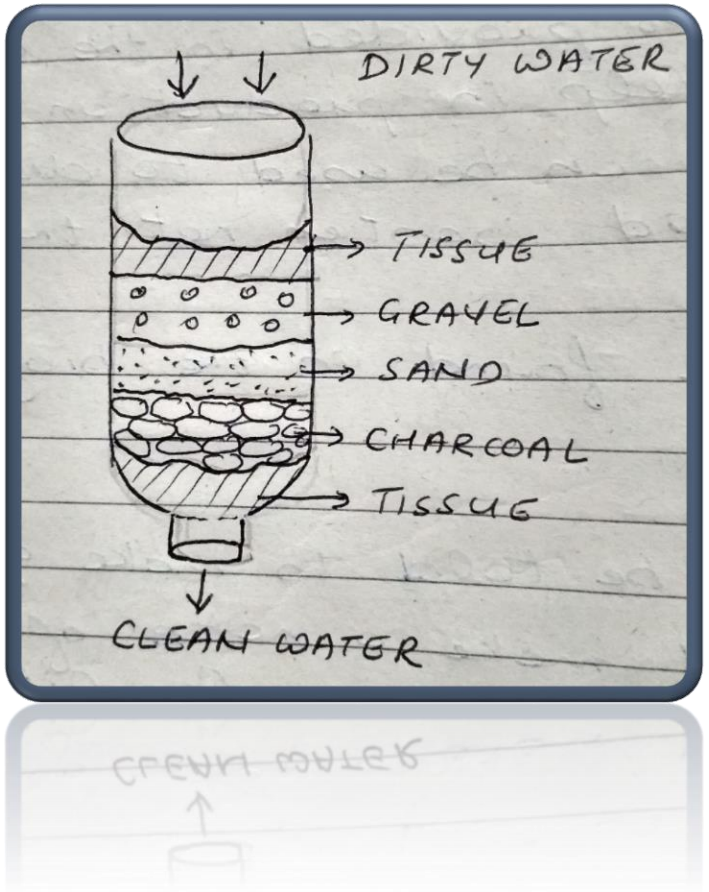
RECAPITULATION :

- What is the other term used for eutrophication?
- Where are manholes provided in the sewerage system?

- Which bacteria help in production of biogas?
- Which chemicals can be used to disinfect water?
- Why should solid wastes not be thrown down the drain?
- Which gases are found in the biogas?

ASSIGNMENTS :

- The students will be told to make a group with their friends and make a note of all the open drains or manholes in their locality.
- They will write about inspirational story of Bindeshwar Pathak, an Indian sociologist and is the founder of Sulabh International.
- Project will be given to the students –Waste management of Kumbh,2019 or in other important event.
- They will be told to perform activity in the groups to show purification of water by using plastic bottle, tissue, gravel, sand, charcoal. The dirty water is poured from the top and passed through these materials. The glass will be kept below the bottle to collect clean water.



RESOURCES:

- NCERT Exemplar
- Learning Science (Cordova Publications)
- Extramarks smartclass,Homework app for MCQ/assignment
- Videos(https://youtu.be/_MvYIZ_niYY) (https://youtu.be/UGqZsSuG7ao) (https://youtu.be/mLbDbmmV6Qc)

ART INTERGRATION:

- Poster making (Art Education)

- Diagrams of sewerage system layout & WWTP (Art Education)
- Collecting information about environmentalists /social workers (Environmental Education)

Co-SCHOLASTIC ACTIVITIES :

- Hands on learning experience by the students while performing purification of water activity in the groups and will develop team spirit & decision making skills.
- The students will discuss in the groups about bacteria present in wastewater treatment and their role in wastewater treatment and clarification of water thus developing communication and collaboration skills.
- They will interact with peers and explain the working of wastewater treatment plant thus developing critical thinking.

LEARNING OUTCOMES :

- The students will be able to summarize how wastewater is generated in day to day activities.
- They will be able to draw diagrams of sewerage system and WWTP.
- They will be able to critically analyse the importance of using better house keeping practices & sanitation and their importance in real life.
- They will be able to describe how water can be conserved by using some easy tricks for disposal of household water.

ASSESSMENT :

- Quiz in the form of teams.
- Daily practice problems.
- Multiple choice questions.
- Peer Assessment.
- Group discussions.
- Projects/Surveys/Activities.
- Class tests and Periodic tests.

BUDHA DAL PUBLIC SCHOOL ,PATIALA
TERM-II LESSON PLAN-2
CLASS-VII SUBJECT-SCIENCE (CHEMISTRY)
SESSION – 2021-22(MONTH-NOVEMBER)

TOPIC :ACIDS,BASES & SALTS
CLASS TRANSACTION :12 Periods (approx.40 min each)

OBJECTIVES :
- To teach students about various types of acids found in edible substances.
- To explain the term indicator and cite examples of some natural indicators from day to day life.
- To make students aware that chemicals can be detected easily with the help of synthetic indicators.
- To make them understand about applications of neutralisation in everyday life.

PREVIOUS KNOWLEDGE TESTING : Questions to be asked….
- What is the taste of curd?
- Can you taste the chemicals present in the lab?
- What is the colour of turmeric used at home?
- Which substance is used as preservative in making of pickles?
- What are different types of tastes?

VOCABULARY & IMPORTANT SPELLINGS :
Edible, tamarind, vinegar, ascorbic, malic, tannic, ketchup, indicator, laboratory, dangerous, corrosive, concentrated, neutral, turmeric, litmus, phenolphthalein, neutralisation, indigestion, quicklime, slaked lime, calamine, formic, milk of magnesia.

INNOVATIVE PEDAGOGIES :

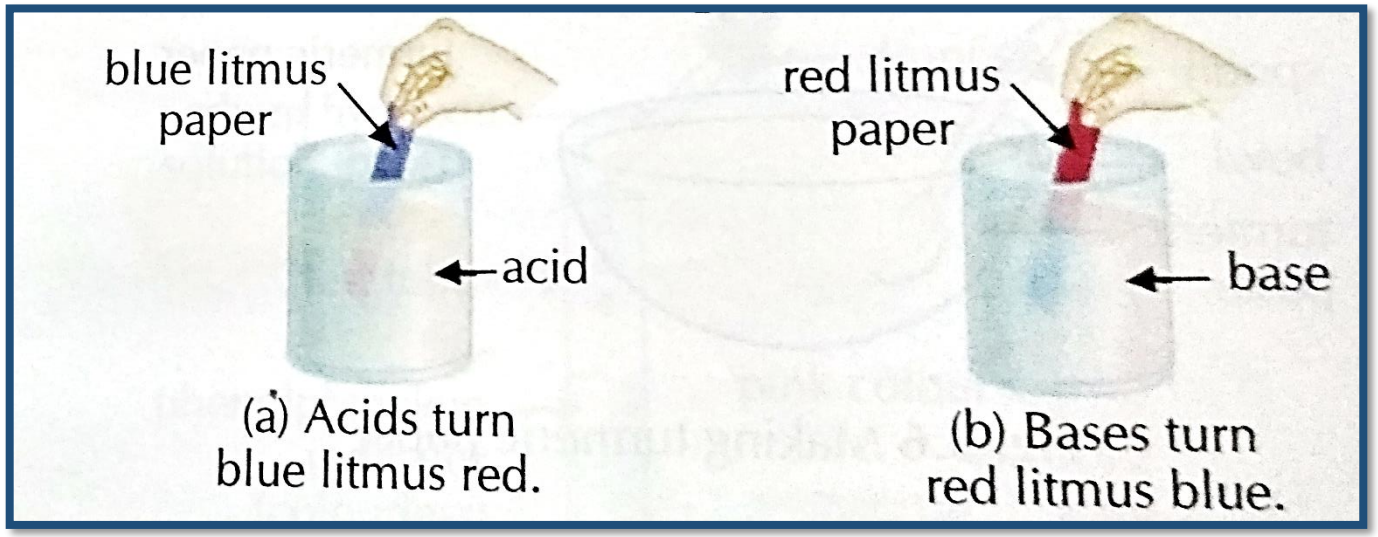
- Explanation of properties of acids, bases and salts in the smartclass (Source-Extramarks).
- Colour changes in acidic and basic solutions due to presence of indicators will be explained with the help of video- Colourful magic trick with acids and bases (https://youtu.be/ujkuW-0cpNw)
- Use of natural indicator turmeric will be explained by showing a video (https://youtu.be/Olezbt9cxfo)
- Activity to test different materials with the help of litmus paper will be performed in the class.
- Testing of different samples of soil with litmus paper will be done.
- The students will make greeting card or bookmark with the help of turmeric paper and soap solution.
- Explanation of neutralisation in daily life with the help of video (https://m.youtube.com/watch?v=QWYcYfS_URc)
- Making of concept maps and flow charts.

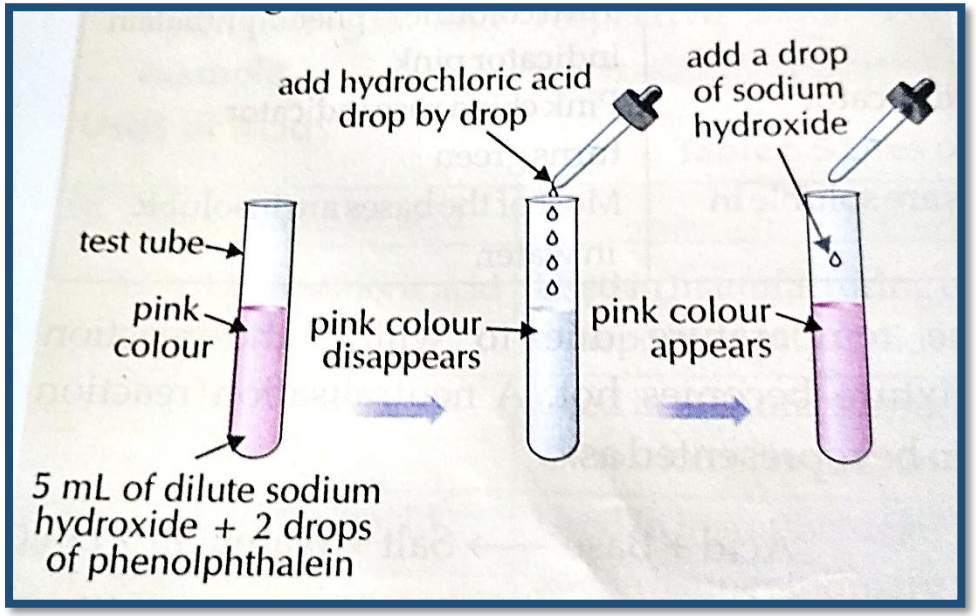
PROCEDURE :

- Different types of acids (natural & mineral) and their sources will be explained with examples.
- It will be discussed that bases are different from acids. They are bitter in taste and soapy to touch while acids are sour in taste.
- The uses of acids and bases in daily life will be discussed in the smart class.
- The examples of neutral substances and indicators for testing acids and bases will be shown in the smartclass.
- Activity for testing different materials like lemon juice, tap water, detergent or soap solution, sugar solution with the help of natural indicators (litmus paper & litmus solution) and synthetic indicators (phenolphthalein, methyl orange) will be taken up in the class.
- Testing of different samples of soil (by mixing in distilled water) will be done with blue and red litmus paper.
- Use of other indicators like china rose, purple cabbage juice will be explained through video.
- With the help of various examples ,it will be explained in the virtual lab that when an acidic solution is mixed with a basic solution, both the solutions neutralise the effect of each other.

ACID + BASE → SALT + WATER + HEAT

- An activity to study the neutralisation reaction will be taken up in the class/laboratory.





- The students will be told to write various colour changes due to different indicators in acids and bases in their notebooks.
- The subtopic neutralisation in everyday life will be discussed with the help of smart class.

  -INDIGESTION- Excess acid is neutralised by antacids like Milk of Magnesia.

  -SOIL TREATMENT-Acidic soil is treated with bases like quicklime {CaO} or slaked lime {$Ca(OH)_2$}.Basic soil is treated with organic matter.

  -ANT or BEE's STING-Formic acid is neutralised with baking soda/ calamine.

  -FACTORY WASTES- Acidic waste is neutralised with basic substances,
- The formation of acid rain, its causes and effects will be discussed in the smartclass.
- Revision of various subtopics will be taken up in the class & MCQ ,short questions, definitions, reason based questions, diagrams and NCERT Exemplar questions will be discussed.

PARTICIPATION OF STUDENTS :

- The students will make a list of various natural acids and their sources.
- They will record the observations of various activities of testing of different materials and soil with indicators.
- They will make greeting card /bookmark with the help of turmeric paper indicator, laminate it and then paste it in their notebook.
- They will write about the effects of various indicators in acids and bases in a tabular manner in their notebooks.

	INDICATOR	COLOUR CHANGE IN ACID	COLOUR CHANGE IN BASE
1.	TURMERIC	No change	Turns red
2.	BLUE LITMUS	Turns red	No change
3.	RED LITMUS	No change	Turns blue
4.	CHINA ROSE	Turns magenta	Turns green
5.	PHENOLPHTHALEIN	No change	Turns pink
6.	METHYL ORANGE	Turns red	Turns Yellow

- They will write definitions of natural acids, mineral acids, dilute acids, concentrated acids, bases, alkalis, neutral substances , salts, indicators ,neutralisation ,aqua regia with examples.
- They will actively answer the questions, draw diagrams, solve MCQ's and objective questions & clear their concepts.

RECAPITULATION :

- Why is vinegar added to packaged food items?
- How can acid be diluted?

- How is litmus solution prepared?
- Why does turmeric stain on cloth turn red when washed with soap?
- What is pH value for neutral, acidic and basic solutions?
- What is the use of aqua regia?
- What happens in the stomach when we eat very spicy food?

ASSIGNMENTS :

- The students will be told to paste labels of various food products (sauce, ketchup, pickles, juices) in which acids are used as preservatives.
- They will be told to make greeting card with the help of turmeric paper & soap solution and bring it in the class.
- They will paste pictures of some common acids like Hydrochloric acid, Nitric acid, Sulphuric acid & common bases like Sodium hydroxide, Ammonium hydroxide and Calcium hydroxide with their uses.

RESOURCES :

- NCERT Exemplar
- Learning Science (Cordova Publications)
- Extramarks smartclass, Homework app for mcq/ assignmemt
- Videos (https://youtu.be/ujkuW-0cpNw)(https://youtu.be/Olezbt9cxfo)(https://m.youtube.com/watch?v=QWYcYfS_URc)

ART INTEGRATION AND OTHER DOMAINS :

- Making of greeting card (Art Education)
- Diagrams of colour changes due to different indicators (Art Education)

Co-SCHOLASTIC ACTIVITIES :

- The students will have hands on learning experience and enhance their ability to make correct observations.

- They will develop analytical skills and decision making skills while using the concept of neutralisation in their everyday life.
- They will develop thinking skills while discussing about acid rain effects and its impact on our environment.

LEARNING OUTCOMES :

- The students will be able to cite examples of different natural indicators and study their application.
- They will be able to identify the variations shown by different indicators in acidic and basic solutions.
- They will be able to write the word equations for acid base reactions.
- They will able to differentiate between acids, bases , neutral substances and salts & will apply the concept of neutralisation in their daily life.

ASSESSMENT :

- Quiz in the form of teams.
- Daily practice problems.
- Multiple choice questions.
- Peer Assessment.
- Group discussions.
- Projects and Activities.
- Class tests & Periodic tests.

BUDHA DAL PUBLIC SCHOOL ,PATIALA
TERM-II LESSON PLAN-3
CLASS-VII SUBJECT-SCIENCE (CHEMISTRY)
SESSION – 2021-22(MONTH- DECEMBER & JANUARY)

TOPIC :REPRESENTATION OF SUBSTANCES
CLASS TRANSACTION :10 Periods (approx.40 min each)

OBJECTIVES :
- To make the students able to differentiate between elements, compounds & mixtures.
- To make them understand the basic concepts of chemistry.

PREVIOUS KNOWLEDGE TESTING : Questions to be asked….
- Which chemical is used during disinfecting of water?
- How many chemical substances are present in biogas?
- What is the formula of common salt that we eat everyday?
- What is formed when acid and base react with each other?

VOCABULARY & IMPORTANT SPELLINGS :
Elements, compounds, mixtures, valency, atomicity, symbol, radicals, balancing.

INNOVATIVE PEDAGOGIES:
- Explanation of elements, compounds and mixtures in the smartclass (Source-Extramarks).
- Learning of symbols of elements with the help of cards.

- Video related to topic –Difference between mixtures and compounds & their identification will be shown .
  (https://youtu.be/TkUiz_yBSrU)
- Making of concept maps and flow charts.

PROCEDURE :

- The definitions of elements, compounds, and mixtures will be explained with the examples in smartclass.
- The rules of writing the symbols of elements will be discussed in the class.
- It will be explained that in a chemical compound , the first half is positively charged called basic radical and the other half is acidic radical which is negatively charged.

  BASIC RADICAL/POSITIVE RADICAL/CATIONS :

  +1 -- H , NH_4 , Li , Na , K

  +2 -- Mg , Ca , Zn , Ba , Cu , Ni , Fe , Sn

  +3 -- Al , Cr , Fe , Au

  Variable valency – Fe (+2) , Fe (+3)

  ACIDIC RADICAL/NEGATIVE RADICAL/ANIONS :

  -1 -- Cl , Br , I , HCO_3 ,NO_3 , OH , HSO_4 , H

  -2 -- CO_3 , O , SO_4

- Once the students have learnt the symbols and valences of some important elements , they will be taught how to write the molecular formula by criss-cross method . e.g.

  Magnesium chloride

  Mg Cl (Symbol)

  2 1 (Valency)

  Mg 1 Cl 2

  $MgCl_2$ (Molecular formula)

- It will be explained that atomicity is the number of atoms present in a molecule. e.g.

  MONOATOMIC - Na , Ag , Au , He

  DIATOMIC - O_2 , H_2, N_2, Cl_2

  TRIATOMIC - CO_2, SO_2 , O_3, H_2O

  POLYATOMIC - P_4, S_8 , H_2SO_4
- With the help of various examples , the students will be taught how to balance the chemical equations.
- Revision of symbols , valences and balancing of reactions will be taken up in the class.

PARTICIPATION OF STUDENTS :

- The students will learn and speak about various symbols of the elements with the help of flash cards.
- They will write valences of acidic and basic radicals in a tabular form in their notebook.
- They will write important definitions in the class and discuss the examples in the groups.
- They will actively answer the questions related to symbols and valences in the quiz and will practice the balancing of word equations.

RECAPITULATION :

- How can you say that blood is a mixture?
- What is difference between element and compound?
- Which type of radicals are present in a compound?

ASSIGNMENTS :

- The students will be told to make a chart of symbols and valences.
- They will be told to find out the names of elements found in some alloys (mixtures) like stainless steel , solder , brass etc.

RESOURCES :

- Learning Science (Cordova Publication)
- Extramarks smartclass
- Video (https//youtu.be/TkUiz_yBsrU)

ART INTEGRATION :

- Making of charts of symbols and valences.

Co-SCHOLASTIC ACTIVITIES :

- The students will develop thinking skills while classifying substances used in daily life into elements , compounds and mixtures.
- They will interact with peers and solve the questions related to balancing of chemical reactions thus developing communication and problem solving skills.

LEARNING OUTCOMES :

- The students will be able to classify the materials used in daily life into elements , compounds and mixtures.
- They will be able to clear their doubts related to formation of a compound and balancing of chemical reactions.

- **ASSESSMENT :**
- Quiz in the form of teams.
- Daily practice questions.
- Peer assessment and group discussions.
- Class tests and Periodic tests.