BUDHA DAL PUBLIC SCHOOL

TERM –I

CLASS-VIII SUBJECT-SCIENCE (CHEMISTRY)

LESSON PLAN - Month-April&May

Synthetic Fibres and Plastics

Previous Knowledge Testing –

- What are natural Fibres and from where they are obtained?
- Why do we prefer to wear clothes made of natural fibres?

Vocabulary Used –

- English (Synonyms of the terms)

Important Spellings –

- Synthetic, monomers, polymers, polymerisation, amide, rayon, tyre cords, wrinkly, ester, conveyor, acrylic, abrasion, eczema.

AIDS / Innovative Methods Used To Explain The Topic –

- Use of smart class to explain the type of fibres
- Video/ PPT showing various uses of different synthetic fibres
- Activity to compare water absorbing capacity of natural and synthetic fibres.
- https://www.learncbse.in/
- https://www.youtube.com/watch?v=fS7fQzuDD2Y

Procedure –

- The classification of fibres will be explained with the help of example in Smart Class
- It will be explained that polymers are substances with a very high molecular mass and is formed by joining of monomers

Monomers , Polymerisation , Polymer –

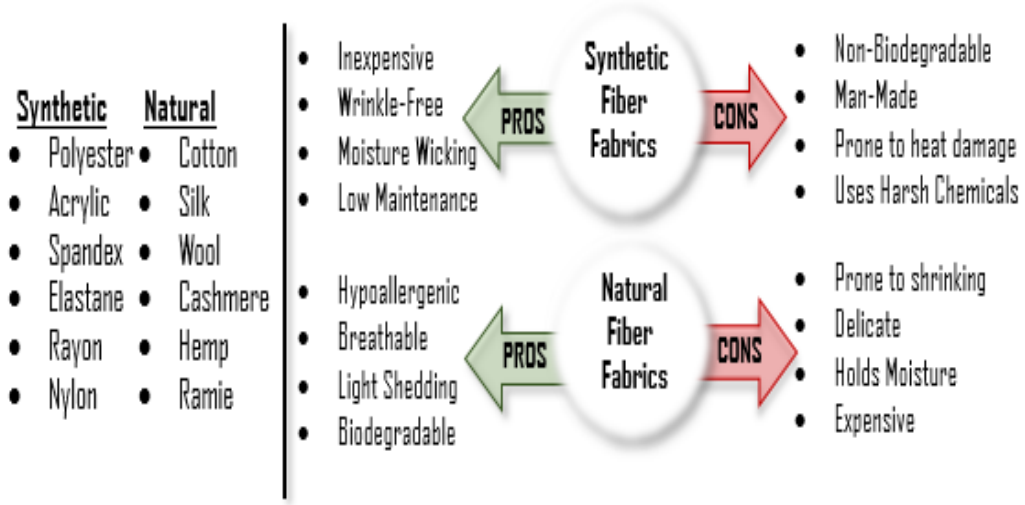
- The properties and uses of various synthetic fibres like nylon, rayon, polyester and acrylic will be discussed in the class
- The students can have hands on feeling various natural and synthetic fibres. They will observe their texture, tensile strength and water absorbing capacity.
- Various advantages and disadvantages of synthetic fibres can be discussed in the class in debate form
- Division of all synthetic fibres – Production, properties and uses will be taken up through Q's and MCQ's in summative assignment in Smart Class

Recapitulation –

- Are fibres used only to make fabrics?
- List examples to explain that polymers can be natural as well as synthetic
- Which type of fabric should be worn while working in kitchen or while burning crackers?
- How is eczema caused by wearing synthetic clothes?
- Compare cotton, wool and nylon on the basis of their strength and which of them is strongest?

Assignments –

- Pasting of 4 natural and 4 synthetic fibres in the notebook and name them
- The students will write an article on PET bottles
- The students will search on the topic: -
  Biodegradable Synthetic Fibres


Synthetic
Polyester
Acrylic
Spandex
Elastane
Rayon
Nylon
Natural
Cotton
Silk
Wool
Cashmere
Hemp
Ramie
Inexpensive
Wrinkle-Free
Moisture Wicking
Low Maintenance
PROS
Synthetic Fiber Fabrics
CONS
Non-Biodegradable
Man-Made
Prone to heat damage
Uses Harsh Chemicals
Hypoallergenic
Breathable
Light Shedding
Biodegradable
PROS
Natural Fiber Fabrics
CONS
Prone to shrinking
Delicate
Holds Moisture
Expensive

Synthetic Fibres and Plastics: - Plastics

Previous Knowledge Testing –

- Are fibres used for making fabric only?
- What is polymerisation?
- Why does a person feel uncomfortable on wearing synthetic clothes?

Important Spellings –

Polythene, Polyvinyl, Polystyrene, Bakelite, Melamine, Formica, Thermocol, Fragile, Teflon, Clogging, Wrappers, Thermosetting, Moulded.

AIDS/ Innovative Methods Used To Explain The Topic –

- Video/PPT will be shown to the students about thermoplastics and thermosetting plastics
- Used of Bakelite, Formica, Melamine, PVS, Teflon, Polystyrene, Thermocol etc will be discovered.
- https://www.learncbse.in/
- https://www.youtube.com/watch?v=fS7fQzuDD2Y

Procedure –

- Various characteristics of thermoplastics and thermosetting plastics along with examples
- General properties of plastics and then uses in our daily life would be discussed
- Revision of various subtopics, reason-based questions will be taken up in the class
- It will be discussed that improper disposal of plastic waste can cause various health and environmental hazards.
- 5-R Principle along with other methods to solve problems created by plastics will be discussed.
- The students will be told to dispose waste in green and blue bins separately i.e. Biodegradable wastes should be thrown in green bins.
- Why should we not burn plastics and synthetic fibres?

Assignments –

- The students will write an article – “Plastics Boon or A Curse”.
- They will differentiate thermoplastics and thermosetting Plastics along with examples
- They will find out different uses of Formica in daily life
- They will collect the information about Bioplastics and compare them with conventional plastics

BUDHA DAL PUBLIC SCHOOL

TERM –I

CLASS-VIII SUBJECT-SCIENCE (CHEMISTRY)

LESSON PLAN - Month-July

Coal and Petroleum

Previous Knowledge Testing –

- What us difference between renewable and non-renewable natural resources?
- What are fossils?
- Which fuel is used in steam engine? How it is different from metro trains?

Important Spellings –

- Exhaustible, Carbonisation, Porous, Ammoniacal Liquor, Drilling Rigs, Pennsylvania, Volatile, Furnaces, Petromax, Methane, Butane, Propane, Haemoglobin, Tremendous, Judicious, Engineers.

Aids/ Innovative Methods Used To Explain The Topic –

- With the help of smart class the process of destructive distillation of coal and the useful products formed in it will be explained.
- Videos/ppt will be shown to explain extraction of petroleum till its refining
- https://www.learncbse.in/
- https://www.youtube.com/watch?v=SxLSD-292YM

Procedure –

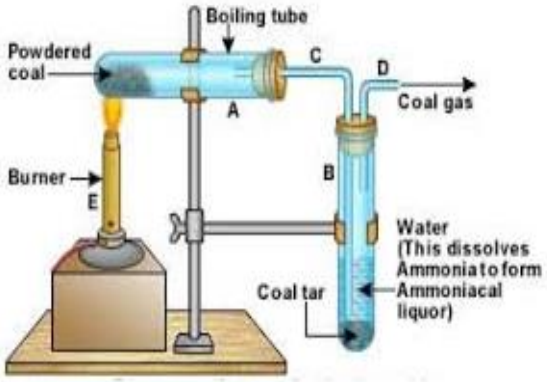
- Different types of natural resource with the help of examples will be explained and discussed in the class

  Inexhaustible Resources – Sunlight, Air, Water, Rainfall, Clay, Sand.

  Inexhaustible Resources –

- Renewable – Forests, Wild Life
- Non Renewable – Coal, Petroleum, Natural Gas

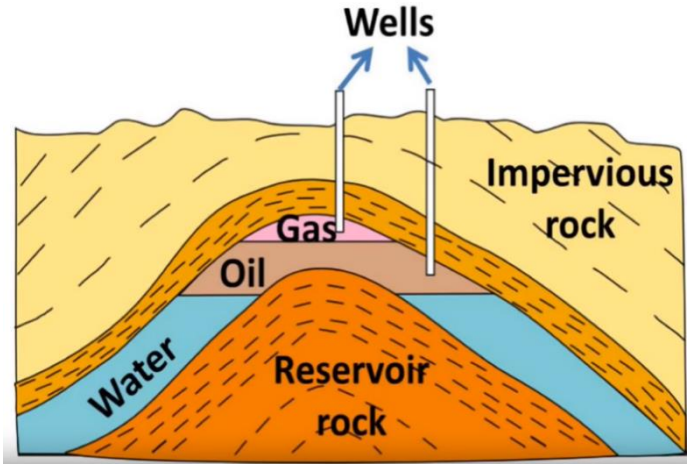
- With the help of Smart Class, Formation of Coal i.e. **Carbonisation** process, uses of coal and destructive distillation of coal will be discussed.
- Students will draw the diagrams related to destructive distillation of Coal, Refining of Petroleum in their notebook.



- The uses of useful products of Coal, various fractions of Petroleum will be discussed in the form of quiz.
- The origin of Natural Gas and its uses will also be discussed in Smart Class.
- The students will speak about limitations of fossil fuel and why we should use them judiciously.

Participation of Students –

- The students will make a list of the states of India where Coal Mines are located and fill them in Political Map of India.
- They will actively participate in class discussions/ quiz or debate and answer the Q's during discussion.
- They will draw the diagrams related to various subtopics of Coal and Petroleum.



Recapitulation –

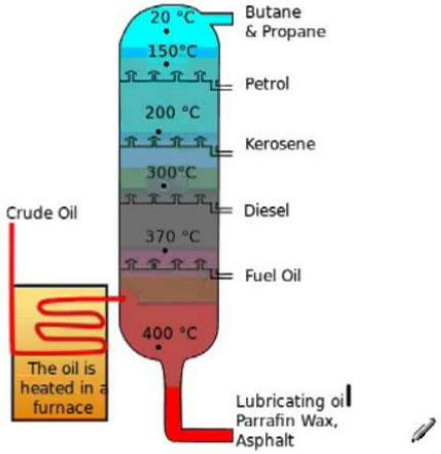
- What are Fossil Fuels?
- What are different varieties of Coal and their Carbon Content.
- Why is petroleum called Black Gold?
- What will happened if we inhale of CO?

Assignments –

- The students will be told to prepare a project report on the use of alternative sources of energy like Solar Energy, Wind Energy and Tidal Energy.

- They can collect information on the topic –
  "Should the Fossil Fuels be replaced by Bio Fuels " during their Summer Vacation/ Class .

- They will enlist Various fractions of Petroleum in Tabular Form, their uses along with pictures in their notebook.



BUDHA DAL PUBLIC SCHOOL

TERM –I

CLASS-VIII SUBJECT-SCIENCE (CHEMISTRY)
LESSON PLAN - Month-August

Pollution of Air and Water

Previous Knowledge Testing –

- Which type of pollution is caused when you burn crackers during Diwali?
- What happens when the garbage is dumped into the river water?
- Name a greenhouse gas which causes global warming.

Important Spellings –

Urbanisation, Contamination, Permissible, Ultraviolet, Eutrophication, Chlorofluorocarbon, Zooplankton, Chlorination, Potable

Aids / Innovative Methods used to Explain The Topic –

- With the help of Smart class the sources of air pollution will be discussed.
- They will be shown a video / ppt related to Carbon Monoxide poisoning.
- Poster making in class : - On topic – Prevention of air pollution.
- https://www.learncbse.in/
- https://www.youtube.com/watch?v=L-HC85rgbOA

Procedure –

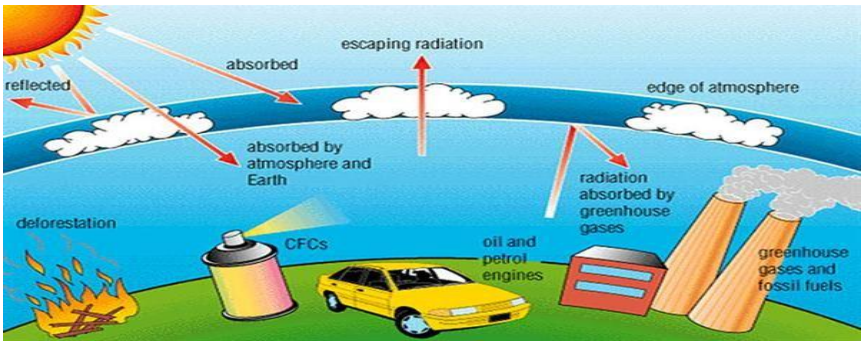
Various causes and effects of air pollution will be explained in detail in the class.

- The topic acid rain, Global Warming and ozone layer depletion will be discussed in the class with the help of Smart Class and videos.

- The students will be told to speak about the methods of prevention and control of air pollution.
- Various causes of water pollution will be discussed in the class.
- The topic of Eutrophication and Biological Magnification will be explained in the smart class
- The students will speak about different ways by which water pollution can be controlled.

Participation of Students –

- The students will draw diagrams related to Global Warming, Acid Rain, and Biological Magnification in their notebook.
- They will speak about various methods to control air and water pollution.
- They will participate in discussion –
  "Adverse effects of Burning Crop Residue"



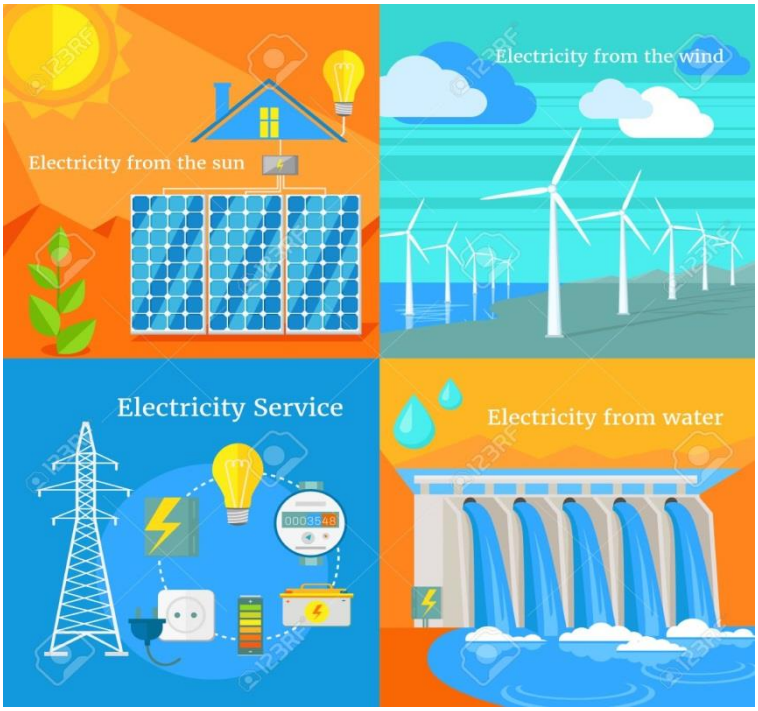
Recapitulation –

- Which gas can kill a person if inhaled in excess?
- Why is chlorine added to filtered water ?
- Which radiations are prevented by Ozone layer?
- Name various greenhouse gases
- What is the function of Catalytic Converter?

Assignments –

- The students will write one case study about Damaging Effects of air pollution on monuments or Damaging effects of Water Pollution on River Ganga in their notebook.

- They will paste pictures related to any one alternate source of energy (Hydel, Tidal, Solar, Wind, Geothermal, Biomass etc.)



- They will find information on topic “Why CFC’s have been banned in various countries and which protocol was signed between various countries to prevent ozone layer depletion.

BUDHA DAL PUBLIC SCHOOL

TERM –II LESSON PLAN
CLASS-VIII SUBJECT-SCIENCE (CHEMISTRY)
MONTH:-OCTOBER & NOVEMBER

TOPIC – COMBUSTION AND FLAME

OBJECTIVES :

- To categorise items according to their rate of combustion and explain different types of combustion
- To teach students about the features of combustible and non combustible substances.
- To provide knowledge about principles of fire fighting.
- To make them understand about various zones of candle flame.
- To discuss about the harmful products formed due to burning of fuel and their effects.
- To teach them about features of an ideal fuel.

PREVIOUS KNOWLEDGE TESTING : Questions to be asked…..

- Which fuel is used for cooking purpose?
- Which gas is required for the process of burning?
- Name two fossil fuels.
- Which gas is produced during incomplete combustion of fuel?
- Name a cleaner and environment friendly fuel.

VOCABULARY AND IMPORTANT SPELLINGS :

Combustion, Bunsen, charcoal, spontaneous, phosphorus, attainment, ignition, supporter, inflammable, nozzle, saponin, extinguisher, blisters, camphor, luminous, moderately, goldsmith, calorific, carboxyhaemoglobin, unleaded, corrosive.

INNOVATIVE PEDAGOGIES:

- Explanation of various types of combustion in the smart class (Source-Extramarks).
- It will be explained in the class with the help of videos how to use fire extinguishers – (https://youtu.be/IUojO1HvC8c) (https://youtu.be/w4jHpHoYZhk)
- Activities to study the conditions required for combustion process will be performed in the class.
- Types of fire extinguishers and their use will be discussed with the help of video.(https://youtu.be/GjSoxJF3RD4)
- Making of concept maps and flow charts.

PROCEDURE:

- The difference between burning and combustion will be discussed in the smart class.
- It will be discussed with the help of various activities in the class/virtual lab that there are three conditions necessary for combustion process—
  - Combustible substance (FUEL)
  - Supporter of combustion (AIR)
  - Ignition temperature
- The fire fighting principles and types of fire extinguishers will be explained with the help of video.

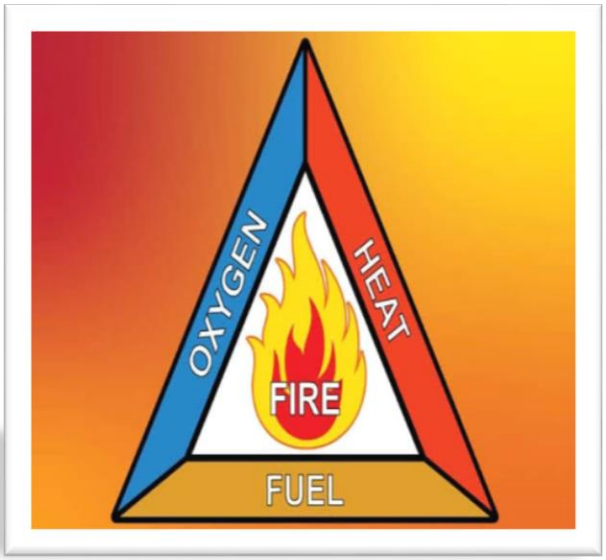
- The working and construction of foam type fire extinguisher and how to use fire extinguisher will be discussed with the help of videos.
- Various zones of candle flame will be explained in the smart class and compared on the basis of hotness and colour.
- The classification of fuels on the basis of their state (solid, liquid, gas) will be discussed with various examples.

- Characteristics of good fuel and harmful products formed on burning of fuels will be explained in smart class

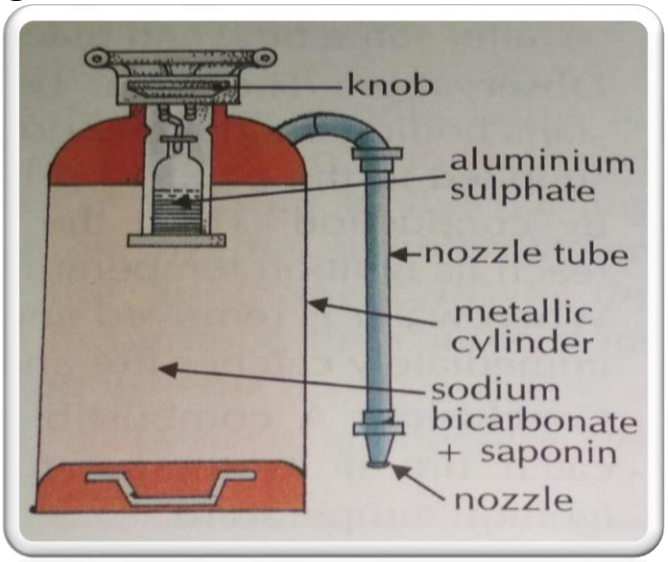
- Revision of various subtopics will be taken up in the class(MCQ ,short questions ,definitions ,reason based questions , diagrams) and NCERT Exemplar questions will be discussed.

PARTICIPATION OF STUDENTS :

- The students will take examples of combustible substances from their daily life and then categorise them into combustible and non-combustible substances.
- The students will draw the diagram of fire triangle and show the conditions needed for combustion.
- The students will speak on various fire incidents , their causes and what to do in that situation.



- They will draw the diagram of foam type fire extinguisher and also make a project on different types of fire extinguishers.



- They will speak on the points related to taking care of fire victims.
- They will compare different fuels used on the basis of calorific value and find out which is the best one

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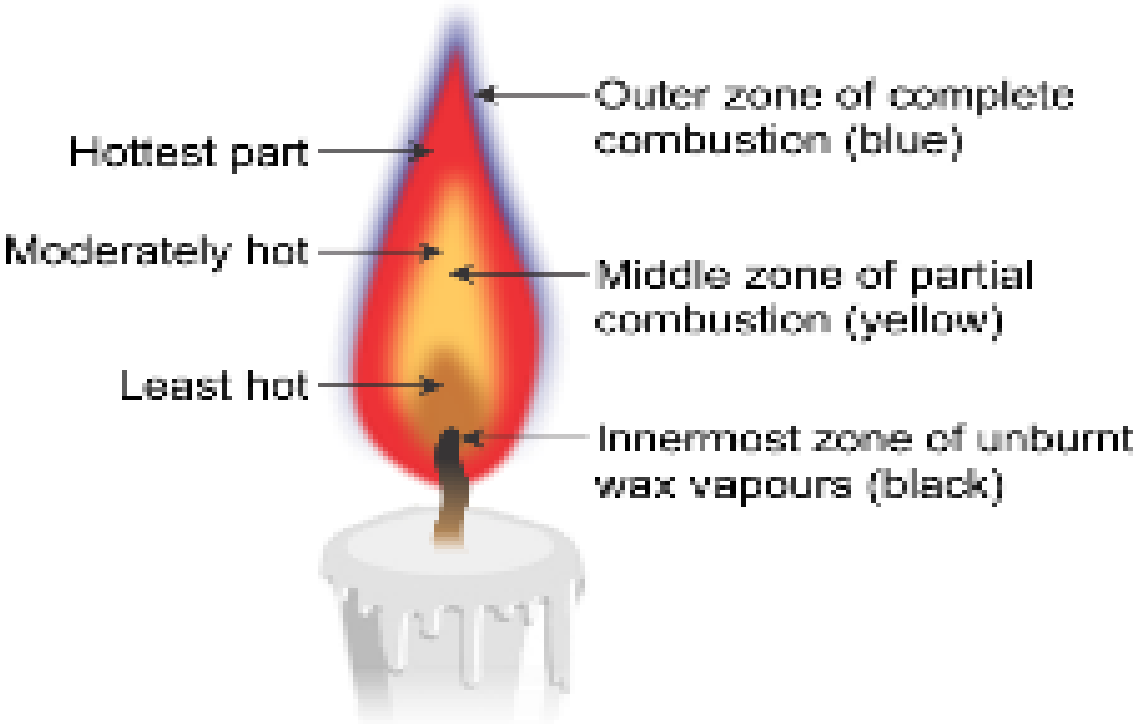
- They will participate actively in the class on the topic – Judicious use of fossil fuels. They will also highlight the harmful effects of burning of fossil fuels.
- They will draw diagram of zones of candle flame in their notebooks.



- They will actively answer the questions , draw diagrams ,solve MCQ's and objective questions and participate in the discussions.

RECAPITULATION:

- Give example of spontaneous combustion.
- Why water cannot be used to extinguish the fires caused by electrical short circuit or burning oil ?
- Why is carbon dioxide considered as best fire extinguisher?

- Why do coal and charcoal burn without producing flame?
- What happens when fuel burns in insufficient supply of oxygen ?

- What are effects of acid rain?

ASSIGNMENTS:

- The class will be divided into groups of five students each and they will prepare presentation on various subtopics and these will be followed by discussions.
- The students will be told to make a project on various types of fire extinguishers.
- They will be told to prepare a write up on topic – Use of alternate sources of energy.
- They will make a list of public places ad the areas in their school where fire extinguishers and fire safety methods have been installed.

RESOURCES:

- NCERT Exemplar.
- Learning Science (Cordova Publication).
- Extramarks smartclass.
- Videos (https://youtu.be/IUojOHvC8c) (https://youtu.be/w4jHpHoYZhk) (https://youtu.be/GjSoxJF3RD4).

ART INTEGRATION AND OTHER DOMAINS :

- The students will draw diagrams of fire extinguisher and zones of candle flame. (Art education)

Co-SCHOLASTIC ACTIVITIES:

- The students will critically analyse the conditions required for the combustion process through different activities.
- They will develop decision making skills after learning about types of fuels and their calorific values & will decide which fuel is best for environment.
- They will discuss about characteristics of an ideal fuel thus developing collaborative learning and communication skills.

LEARNING OUTCOMES:

- The students will be able to list the harmful products formed by burning of fossil fuels.
- They will be able to explain the reason for the use of outermost zone of flame for melting metals by goldsmiths.
- They will be able to effectively interpret firefighting methods and working of fire extinguishers.
- They will be able to answer the application-based questions related to combustion process.
- They will develop the ability to analyse and discuss about characteristics of good fuel.

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

TERM –II LESSON PLAN

CLASS-VIII SUBJECT-SCIENCE (CHEMISTRY)

MONTH:-DECEMBER & JANUARY

TOPIC : MATERIALS:METALS AND NON-METALS

OBJECTIVES :

- To teach students about the symbols of metals and non metals.
- To make them differentiate between metals and non metals on the basis of physical and chemical properties.
- To teach them exceptions of metals and non-metals based on physical properties.
- To make them understand about the phenomenon of corrosion and methods of prevention of rusting.

PREVIOUS KNOWLEDGE TESTING:

Questions to be asked…….

- Which gas is having highest concentration in the atmosphere?
- Which is the hardest natural substance?
- What is the nature of substance if red litmus paper turns blue in it?
- Which conditions are necessary for rusting?
- Name the metal which is deposited on iron during galvanisation process.

- Which alloy is used for joining electrical appliances?

VOCABULARY AND IMPORTANT SPELLINGS:

Metalloids, arsenic, antimony, germanium, gangue, metallurgy, haematite, malleability, hammering, ductility, stretched, gallium, sonority, platinum, corrosion, galvanisation, crucible, tarnished, electroplating, anodising, chrome steel, duralumin.

INNOVATIVE PEDAGOGIES:

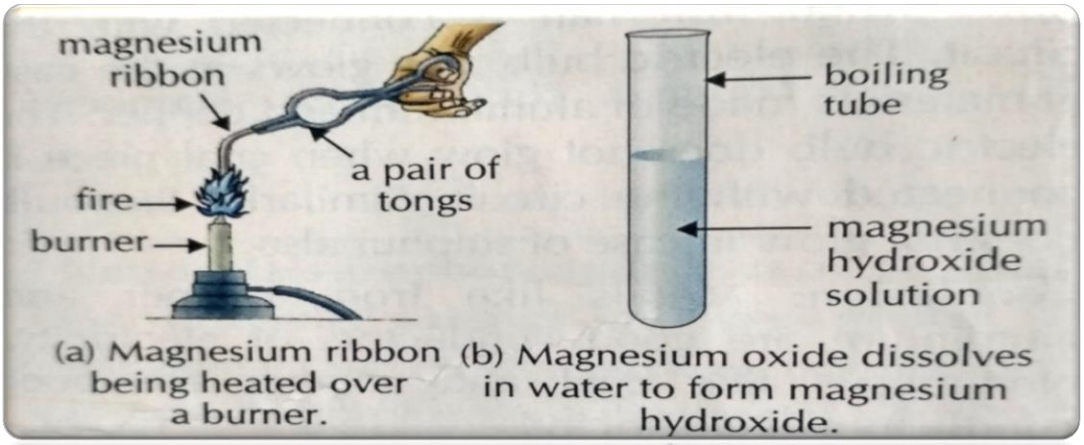
- Explanation of physical properties of metals and non-metals in the smart class (Source- Extramarks).
- Properties of metals and non-metals and uses will be discussed with the help of video (https://youtu.be/105Dz_t3F04) (https://youtu.be/fjHpIFxGae8)
- Chemical reaction of metals with oxygen and displacement reaction will be performed in the lab/ virtual lab.
- Recording of observations of changes in metals coins when exposed to air.
- Making of concept maps and flow charts.
- Learning of reactivity series through mnemonics

PROCEDURE:

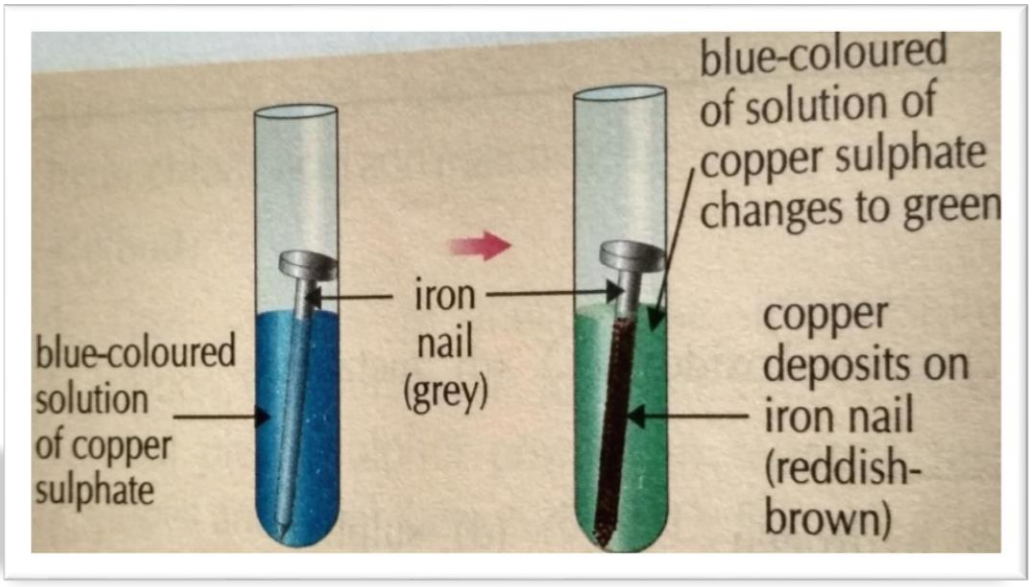
- Various terms related to physical properties like malleability, ductility, brittleness, sonority, lustre etc. will be explained in the smart class.
- The difference between physical properties of metals and non-metals will be explained with the help of examples.

- Chemical reactions of metals and non-metals with oxygen, water and acids will be explained with the activity in the laboratory.

e.g. When Magnesium reacts with oxygen, white powder of Magnesium oxide is formed which is basic in nature.



- It will be explained with examples that the displacement reaction is a chemical reaction in which a more reactive metal displaces a less reactive metal from its salt solution.



- Activity regarding testing of metals with different acids will be shown in the smart class.
- Uses of some important metals and non-metals in our daily life will be discussed.
- The process of corrosion in case of silver, copper, and iron (rusting) will be discussed and the students will be told to write down the chemical reaction of corrosion.
- With the help of various examples, it will be discussed that alloys are homogenous mixture of two or metals or non-metals. The uses of various alloys like brass, bronze, duralumin, German silver, steel, chrome steel, stainless steel, solder etc. will be discussed.
- Revision of various sub topics will be taken up in the ssclass (MCQ, short Q's, definitions, reason-based questions, diagrams) and NCERT Exemplar questions will be discussed.

PARTICIPATION OF STUDENTS:

- The students will write the names of metals and non-metals and their symbols in tabular form.

They will paste pictures of metals and non-metals used in our daily life in the notebook.

- They will write various definitions related to physical properties and will write

about exceptional cases of metals and non-metals.

- They will write reactivity series of metals in the decreasing order in their notebook.

- The student will share the ideas about the methods of prevention of rusting and

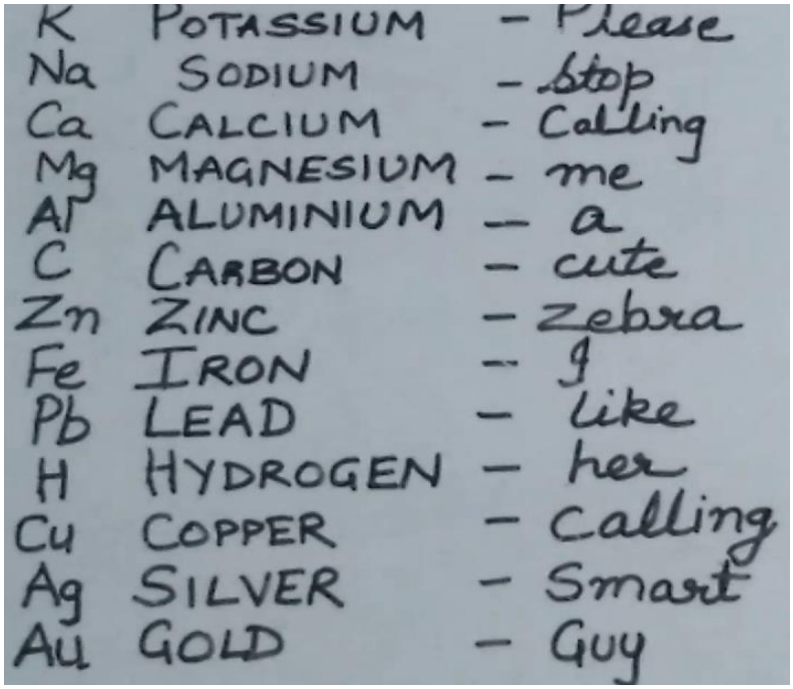
observe the color changes in various metal coin at their home.

- They will actively answer the reason-based questions, draw the

diagrams, solve MCQ's and objective questions in the class.

RECAPITULATION:

- What are metalloids?
- What is difference between malleability and ductility?
- How will you test for metals and non-metals about acidic and basic nature?
- Which gas is produced when metal react with water?
- What is an alloy? What are constituents of solder?
- Why does copper sulphate solution turn green in color when iron is added in it?



ASSIGNMENTS:

- The students will be told to tabulate differences between metals and non-metals on the basis of physical and chemical properties.
- They will paste pictures of uses of metals and non-metals in their notebook.
- They will be told to observe the color changes occurring in the various metal coins and discuss their observations in the class.

RESOURCES:

- NCERT Exemplar
- Learning science (Cordova publication)
- Extra- Marks Smart Class
- Videos- (https://youtu.be/105Dz_t3504) (https://youtu.be/fjHpIFxGae8)

ART INTEGRATION AND OTHER DOMAINS:

- Colour changes in various metal coins.

CO-SCHOLASTIC ACTIVITIES:

- They will provide examples for different types of metals and non-metals and apply concepts learned in everyday problems.
- They will be able to critically analyze the importance of metal and nonmetals.
- Hands on learning experience by the students by performing chemical reaction activity.

LEARNING OUTCOMES:

- They will be able to effectively interpret various uses of metals and non-metals.
- They will be able to differentiate between physical and chemical properties of metals and non-metals.
- They will be able to answer the application-based questions.
- They will be able to write word equations and chemical reactions of metals with air, water and acids.

ASSESSMENT:

- Quiz in the form of teams.
- Daily practice questions.
- Peer assessment.
- Group discussions.
- Activity work.
- Class tests.
- Periodic test.