K. D. PAWAR SHIKSHAN MAHAVIDYALAYA

AANGEWADA, NAGPUR ROAD, SAONER DIST- NAGPUR-441107
(Recognized by N.C.T.E. & R.T.M. Nagpur University, Nagpur)
Mob. No. 9822697899

N.C.T.E. Code: APW03501/1234513 **RTM Nagpur University College Code: 348**

Ref: NAAC 2024/MLD/Cr-2.4.5 Date-07/05/2024

Criteria: 2.4.5	**Adequate skills are developed in students for effective use of ICT for teaching learning process in respect of** **1. Preparation of lesson plans** **2. Developing assessment tools for both online and offline learning** **3. Effective use of social media/learning apps/adaptive devices for learning** **4. Identifying and selecting/ developing online learning resources** **5. Evolving learning sequences (learning activities) for online as well as face to face situations**
Findings of DVV	Documentary evidence in support of each response selected. Sample evidence showing the tasks carried out for each of the selected response
Response/ Clarification	1. **Sample lesson plan by students is attached (Appendix I)** 2. **Supporting documents and reports of the activities are attached (Appendix II)**

K.D.Pawar Shikshan Mahavidyalaya Saoner, Dist. Nagpur

Appendix I

Appendix II

के. डी. पवार शिक्षण महाविद्यालय
सावनेर, जि. नागपूर

K. D. PAWAR SHIKSHAN MAHAVIDYALAYA, SAONER

शैक्षणिक सत्र 2021 – 2023
(Session)

सराव पाठ नियोजन पुस्तिका

(Practice Teaching Planning Book)

छात्र अध्यापकाचे नांव : Shalini L. Hedau
(Student-Teacher's Name)

क्रमांक :
(Roll No.)

अध्यापन पध्दती : १) Chemistry
(Methods)

२) Math's

अ नु क्र म णि का (Index)

क्रमांक (Sr.No.)	दिनांक (Date)	Topic	वर्ग (Class)	विषय (Subject)	पर्यवेक्षकाची सही (Sign. of Supervisor)
1	13/9/22	Heat and Heat Exchange	9th	Chemistry	✓ Good Completed Singvi
2	19/9/22	Carbon and Hydrocarbon	10th	Chemistry	
3	27/9/22	Matter and State of Matter.	9th	Chemistry	
4	6/10/22	Atoms and Molecule.	9th	Chemistry	
5	10/10/22	Metal and Non-Metal.	10th	Chemistry	
6	18/10/22	Physical change and chemical change.	9th	Chemistry	
7	27/10/22	Thermal conductivity.	9th	Chemistry	
8	1/11/22	Isomerism	9th	Chemistry	
9	7/11/22	Combustion and Flame.	8th	Chemistry	
10	11/11/22	Force and Pressure	8th	Chemistry	
11	21/11/22	Chemical effect of electric current.	9th	Chemistry	
12	29/11/22	Fraction	8th	Chemistry	

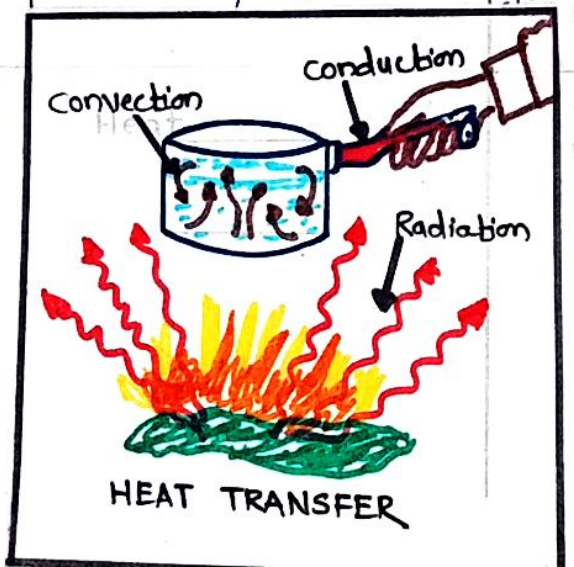
अ नु क्र म णि का (Index)

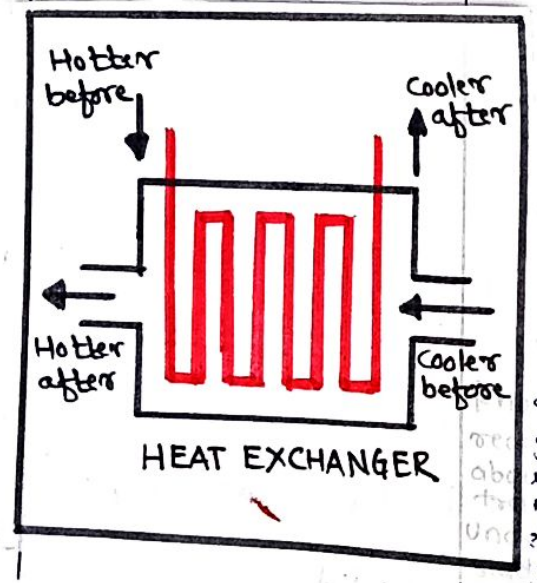
क्रमांक Sr.No.)	दिनांक (Date)	शाळा (School)	वर्ग (Class)	विषय (Subject)	पर्यवेक्षकाची सही (Sign. of Supervisor)
13	5/12/22	Atomic structure	8th	Chemistry	Completed Singvi
14	13/12/22	Acid and Base	9th	Chemistry	
15	19/12/22	Neutralization	9th	Chemistry	
16	26/12/22	Fossil fuel coal.	8th	Chemistry	
17	3/01/23	Petroleum oil.	8th	Chemistry	
18	6/01/23	Natural Gas.	8th	Chemistry	
18	8/01/23	Chemical Bonding	9th	Chemistry	
20	10/01/23	Chemical Reaction	8th	Chemistry	
21	14/01/23	Language of chemistry	8th	Chemistry	
		Blue Point with test → Atom and Molecule			

पाठ क्रमांक (Lesson No.) : 1 | विषय (Subject) : ~~Science~~ Chemistry | दिनांक (Date) :

विद्यालयाचे नांव (School Name) : Nagar Parishad High School Samer | विषयांश (Topic) : Heat and Heat Exchange | उपविषयांश (Sub-Topic) : ① Heat ② Heat Exchange | इयत्ता (Class) : 10th

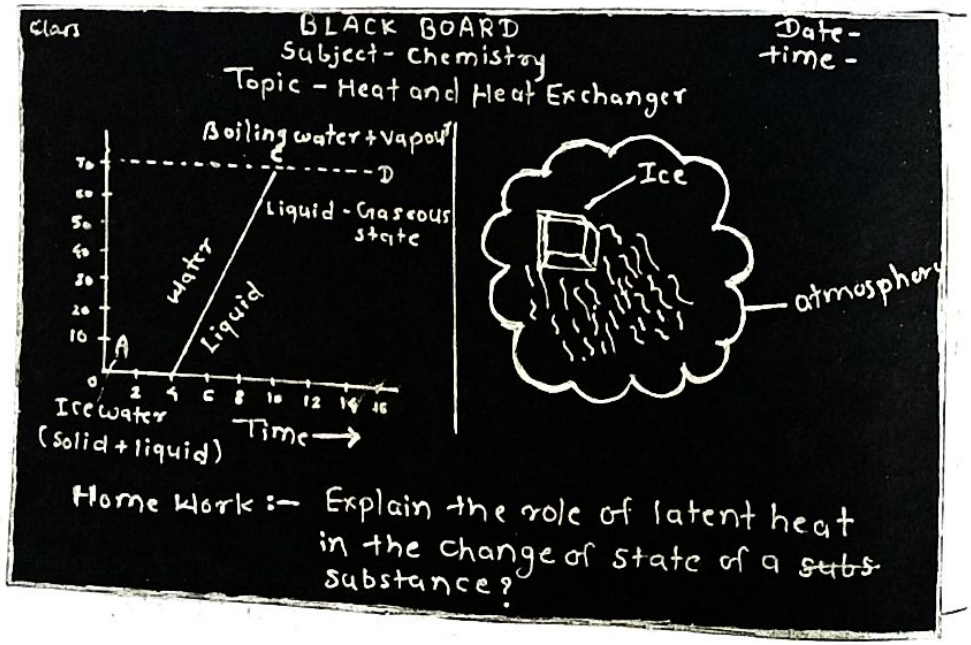
पाठ साहित्य (Teaching Aids) : Model, duster, chalk, black board, Pointer etc. | पूर्वज्ञान (Previous Knowledge) : | तासिका (Period) : 1st | वेळ (Time) : 40 min

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmosphere in class. ③ To correlate Previous knowledge to present topic. ④ To let the Student know the importance of the topic. ⑤ To develop Scientific attitude	Teacher asks some questions based on previous knowledge. ① Where do Houses lose heat ? ② What will absorb heat ? ③ Can heat travel down ? ④ What is true warm air ? ⑤ How does the heat travel in air ?	Students give expected answer. → Around windows and doors and about 10% of heat will disappear through the floor. → steel spoon, iron griddle, water, soil and wax will absorb heat. → Heat can move up & down and side ways, depending on the situation. → Warm air is lighter. → Heat is transferred in to air through the atmospher.
हेतूकथन : (Statement of Aim)	So today we are going to learn about "Heat and Heat Exchange"			
विषय प्रतिपादन : (Presentation)			Teacher explains about Heat. The amount of heat energy absorbed at constant temperature by unit mass of a solid to convert into liquid phase is called the Specific latent heat of fusion. During transition of solid	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
		knowledge - Student recognize & tells about heat. understanding - student tells difference between Heat and temperature.	Phase to liquid the object absorbs heat energy, but its temperature does not increase This heat energy is utilised for weakening the bonds between the atoms or molecules in the solid and transform it into liquid phase. Teacher asks some question. ① What do liquids expand with heat? ② What is the difference between Heat and temperature.	Students give answers. → All three states of matter Solid, liquid and gass expand when heated. → Heat - It is a type of energy that causes a persons body to feel hot or cold. Temperature of a body is the parameter which indicates how hot or cold its.
	Heat Exchange 	wledge - Student gnize & tells it Heat is nsferred. rstanding - ent give different examples on heat exchange.	Teacher explains Heat Exchange. The heat exchange between two objects is proportional to the difference of their temperatures. a heat exchanger is a system used to transfer heat between a source and a working fluid Heat exchangers are used in both cooling and heating process. Heat exchangers regulate fluid temp. Teacher ask some question. ① Heat is transferred from where to where? ② What is an example of heat exchange?	Students listen carefully Students give answers. → Two objects is proportional to the difference of their temperatures. → Refrigeration, heating and air conditioning systems, power plants etc.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
पुनरावलोकन : (Recapitulation)		① To Strengthen acquired knowledge ② To revise the topic ③ To recall the gain knowledge. ④ To test student knowledge.	Teacher summaries the topic and ask some question on it. ① Why is heat exchanger important in chemical industry? ② What are sources of heat?	Students give answer. → A heat exchanger is a device used to efficiently transfer energy from one fluid into another fluid. → Natural gas, propane (LP), Oil coal, wood, electricity, heat pump, ground source heat Pump and solar energy.
गृहपाठ : (Home-Work)		① To develop the habit of self Study. ② To develop writing skill and implement ation of student. ③ To use leisure time at home.	Teacher write Home-work on the black board. ① Explain the role of latent heat in the change of state of a substances?	Students Note down their Home work in Notebook.

फलक - लेखन (Black-Board Writing)



अभिप्राय (Remarks)

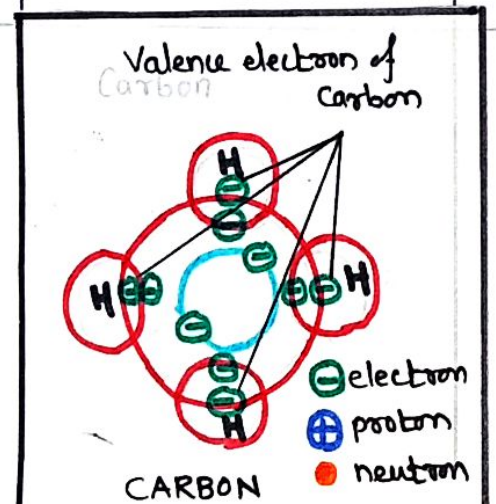
lesson was good.
Presentation was proper.

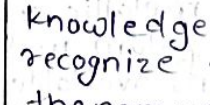
पर्यवेक्षकाची सही
(Sign. of Supervisor)

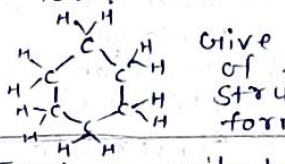
पाठ क्रमांक (Lesson No.) : _____ विषय (Subject) : Chemistry दिनांक (Date) : _____

विद्यालयाचे नांव (School Name) : Nagar Parishad High school, Saoner. विषयांश (Topic) : Carbon and Hydrocarbon इयत्ता (Class) : 10th

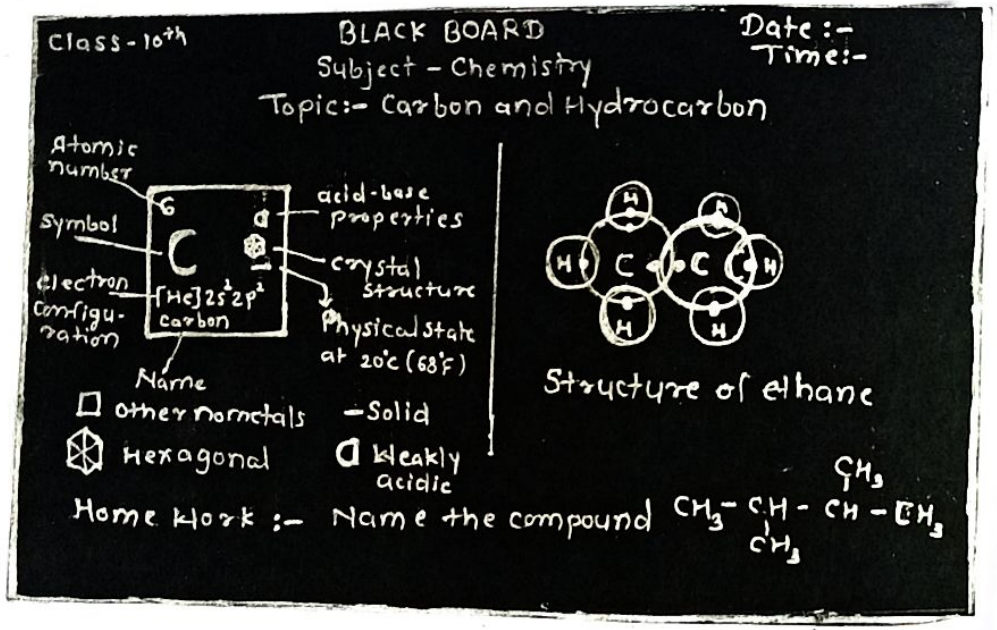
पाठ साहित्य (Teaching Aids) : Model, duster, chalk, black board, Pointer etc. पूर्वज्ञान (Previous Knowledge) : _____ उपविषयांश (Sub-Topic) : ① Carbon ② Hydrocarbon तासिका (Period) : 1st वेळ (Time) : 30 min

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmosphere in class. ③ To correlate Previous knowledge to present topic. ④ To let the student know the importance of the topic. ⑤ To develop scientific attitude	Teacher ask some questions based on previous knowledge. ① Did you observed that there are different kind of component present in surrounding tell me few Name ? ② What is compound ? ③ What is Example of compound ? ④ What are the type of compound ?	Students give expected answer. → Fibers, paper, medicines wood, fuels are made of various compounds. → A compound is a substance made up of two or more different chemical elements combined in fixed ratio. → Water H_2O = Hydrogen + oxygen → Two types of compound. Molecular compound and salts.
हेतूकथन : (Statement of Aim)	So today we are going	to learn about	" A Carbon and Hydrocarbon."	
विषय प्रतिपादन : (Presentation)			Teacher explains about carbon. Carbon is from Latin word Carbo "Coal" is a chemical element with the symbolc and atomic number is 6. It is nonmetallic and tetravalent its atom making four electrons available to form covalent chemical bonds. It belongs to group 19 of the Periodic table. The uses of Carbon and its compound	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
		knowledge - Student recognize and tells about carbon and bonds of carbon.	are extremely varied. It can form alloys with iron, of which the most common is carbon steel. Teacher ask some question. ① How is carbon used today? ② How many bonds can carbon form?	Students give Answers. → Carbon is used in someway in most every industry in the form of coal, methane gas, and crude oil. → Four bonds can carbon form.
	Hydrocarbons		Teacher explains about Hydrocarbons. The element hydrogen is present to a smaller or large extent in majority of carbon compounds. The compounds which contain carbon and hydrogen as the only two elements are called Hydrocarbons. Hydrocarbons are the simplest and the fundamental organic compound. The smallest hydrocarbon is methane (CH_4) formed by combination of on carbon atom and four hydrogen atoms. Teacher draw structure formula on the black board Teacher ask some question.	Students listen carefully.
		knowledge - Student recognize and tells the name of structure.	①  Name of this alkane. ②  What is the name of the adjecent of hydrocarbon?	Students give Answer. → Ethane → Cyclohexane

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
पुनरावलोकन : (Recapitulation)		① To strengthen acqulred knowledge ② To revise the topic ③ To recall the gain knowledge ④ To test student ⑤ To summerise the given topic	Teacher summaries the topic and ask some question. ① klhy is carbon the back bone of life? ② klhat is carbon used for ? ③  Give the name of the structural formula.	Students give answers. → The reason is carbon's ability to form stable bonds with many elements, including itself. → It is used for fuel in the form of coal, methane gas, and crude oil. → Cyclohexene.
गृहपाठ : (Home-Work)		① To develop the habit of selfStudy ② To develop writting skill and implemen tation of Student. ③ To use leisure time at home.	Teacher write homework on the black board. ① $CH_3-\underset{\underset{CH_3}{|}}{CH}-\underset{CH_3}{\overset{|}{CH}}-CH_3$ Name of the compound.	Students notedown their Home work in Notebook.

फलक - लेखन (Black-Board Writing)



अभिप्राय (Remarks)

Don't accept corous answers.
Good class control otherwise.
Students were attentive.

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) :

विषय (Subject) : Chemistry

दिनांक (Date) :

विद्यालयाचे नांव : (School Name) Nagar Parishad High School, Saoner.

विषयांश : (Topic) Matter & States of Matter

उपविषयांश : (Sub-Topic) ① Matter ② States of Matter.

इयत्ता (Class) : 9th

पाठ साहित्य : (Teaching Aids) Model, duster, chalk, black board, Pointer, etc.

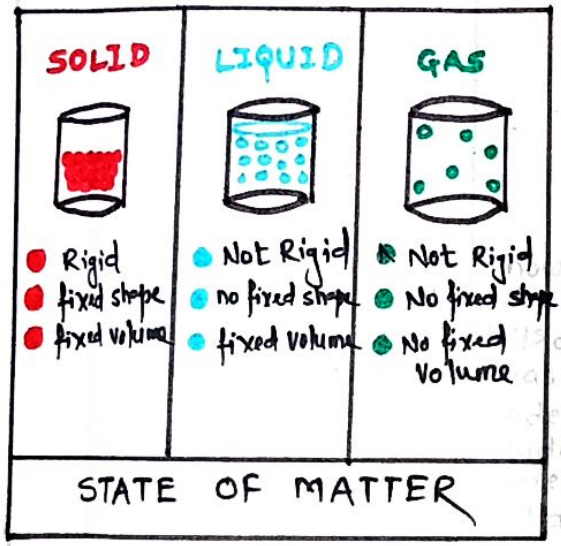
पूर्वज्ञान : (Previous Knowledge)

तासिका : (Period) 2

वेळ : (Time) 30 min

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience): शिक्षक कृती (Teacher Activity)	अध्ययनानुभव (Learning Experience): विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② create an atmosphere in class. ③ To corelate previous knowledge to present topic. ④ To let the student know the importance of the topic. ⑤ To develop scientific attitude.	Teacher ask some question based on previous knowledge to the Student. ① What are objects made of? ② Give some examples? ③ Why are objects made of different materials? ④ What do you think objects around us are made up of?	Students give expected answer. → All the objects are made up of one or more materials. → Table is made of wood and Nails are made of iron so wood iron is material. → Objects and every day structure are made up of different materials. → Everything we see around us is made up of matter.
हेतूकथन : (Statement of Aim)	So today we are going	to learn about	"Matter and States of	Matter."
विषय प्रतिपादन : (Presentation)	Matter		Teacher explains about Matter. Matter is a substance made up of various types of particles that occupies physical space and has inertia. Matter occupies space. Two objects cannot occupy the same space at the same time. The mass is a physical quantity which expresses the amount of	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
		Knowledge - Student recognize and tells about Matter. Understanding - Students gives examples on Matter.	matter in a body. The space inside the constaines that is occupied by matter is it's volume. Teacher ask some question. ① What is Matter? ② What is Give matter Examples?	Students give answers. → Matter is anything that takes up space and an be weight. → Examples pen, pencil ,touth brush water, milk car etc.
	States of Matter.		Teacher explains about States of Matter. classify into three states Solid, Jiquids, Grases. Solid - Matters which have fixed volume and shape are called Solid. Liquid - Matters which have fixed volume but indefinite Shap are called Jiquids. Grases - Matters which have indefinite shape and volume are et called gases. Teacher ask some question. ① What is Jiquid? ② Difference between Solid and liquid.	Students Jisten carefully Students given answers. → A liquid is a sample of matte that conforms to the shape of c container in which it is held and which acquires a defined surface in the presence of gravity. → Liquid are close together with no regular arrangement and solid are tightly packed usually in a regular pattern.



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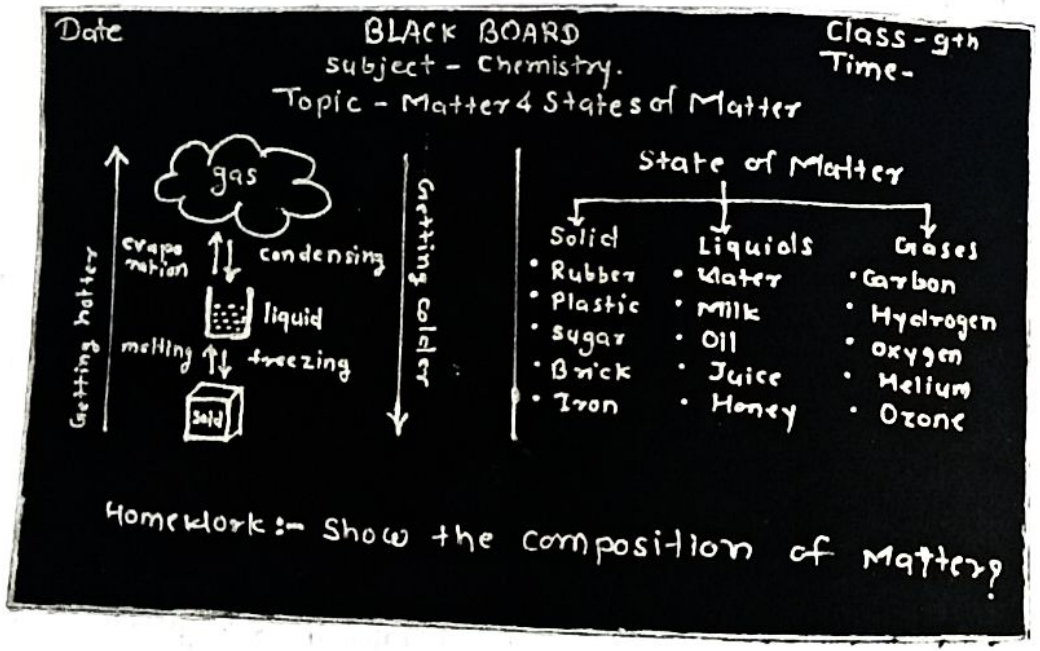
and liquid.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specificatio
पुनरावलोकन : (Recapitulation)		① To Strengthen acquired knowle ② To revise the topic ③ To recall the gai knowledge. ④ To test Student knowledge. ⑤ To summeries the given topic.
गृहपाठ : (Home-Work)		① To develop the habit of self study ② To develop writin skill and impleme ntation of Student. ③ To use leisure time at home.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher summaries the topic and ask some question ① What is matter made of? ② How many types of Matter ? ③ What is non matter ?	Students gives Answers. → Solid, liquid & gass are made of tiny particles called atoms and molecules. → Three types of Matter. Solid, Liquid and gass. → Non matter includes the light from a torch, the heat from a fire and the sound of a police siren.
Teacher write Home work on black board. ① Show the composition of Matter ?	Students Note down their Home work in Note Book.

फलक - लेखन (Black-Board Writing)



अभिप्राय (Remarks)

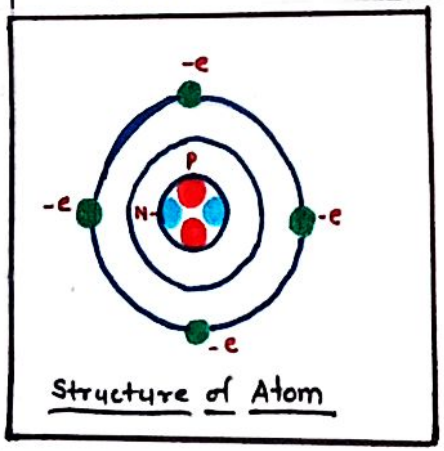
Introduction was good.
B.B. work was good according to the criteria

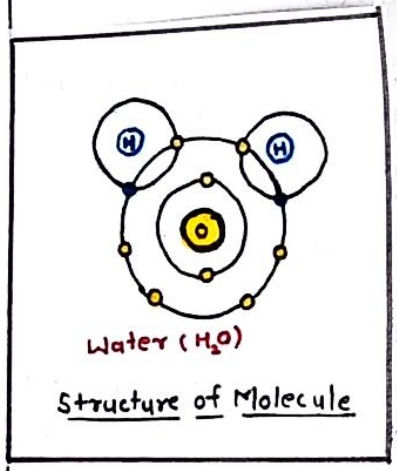
पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : | विषय (Subject) : Chemistry | दिनांक (Date) :

विद्यालयाचे नांव : Nagar Parishad High School Samer. | विषयांश (Topic) : Atoms and Molecule | उपविषयांश (Sub-Topic) : ① Atom ② Molecule | इयत्ता (Class) : 9th.

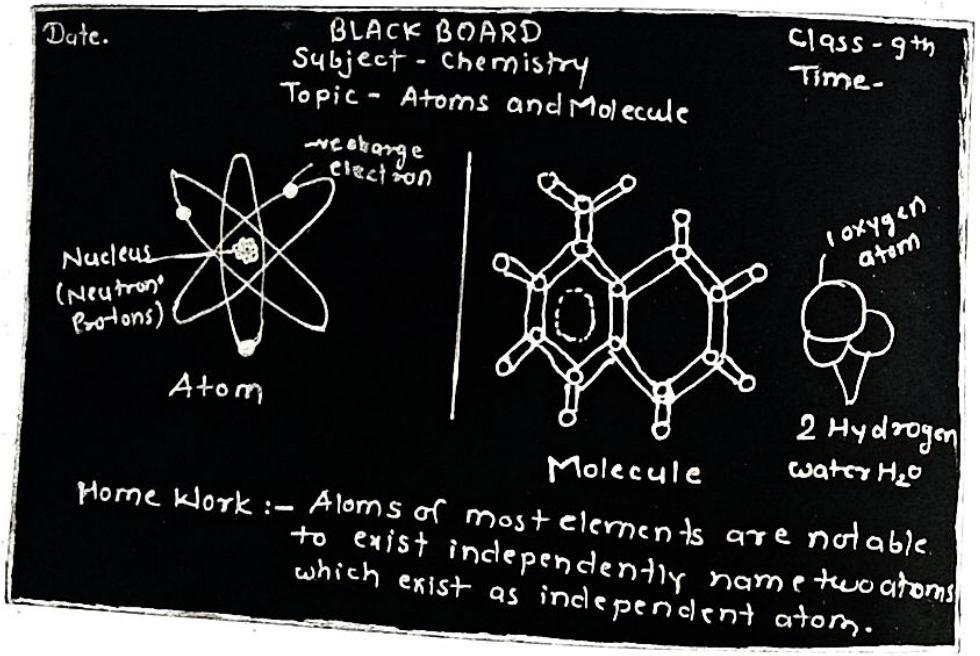
पाठ साहित्य (Teaching Aids) : Model, duster, chalk, black board, pointer etc. | पूर्वज्ञान (Previous Knowledge) : | तासिका (Period) : 3 | वेळ (Time) : 80 Min

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmosphere in class ③ To correlate previous knowledge to present topic ④ To let the student know the importance of the topic ⑤ To develop scientific attitude	Teacher asks some questions based on previous knowledge ① Name the things that are present in our surrouding? ① What is the scientific term Scientist used for them? ③ The table, chair all these are matter. So what is the matter made up of? ④ If we go on dividing particles, a stage will come when particles obtained cannot be divided further what we called that individual particle?	Students give expected answer. → Table, chair, Book, Pencil, etc are present in our surroundings → Scientist's has given a specific terms 'Matter' for there. → Matter is made up of particles. → Individual particle is called as atom.
हेतूकथन : (Statement of Aim)	So today we are going to	learn about	" Atoms and Molecule "	
विषय प्रतिपादन : (Presentation)	① Atom  Structure of Atom		Teacher explains about Atom. Have you ever observe a building, It has collection of rooms and rooms are formed by walls. What is the smallest unit of these buildings? Wall is the smallest unit of buildings. similarly the smallest building of all matters is atoms. Atoms are very small, they are smaller than anything that we can imagine or	Studentslisten carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
		knowledge-Student recognize and tells about atom.	More than millions of atoms when stacked, they would make a layer. barely as thick as this sheet of paper. Teacher ask some question. ① What we inhale? ② What is the defination of atom.	Students give answer. → The oxygen we inhale is formed from oxygen atom. the water we drink, the thing s we use everything is made up of atom. → An atom is the smallest unit of an element. In an atom, subatomic particles like protons and neutrons.
	② Molecule.  Water (H_2O) Structure of Molecule	knowledge-Student recognize and tells about molecule and example of molecule.	Teacher explains about of molecule. In general, a molecule is a group of two or more atoms that are chemically bound together. tightly hold together by attraction forces. Atoms of all same elements or different elements are join together to form a molecule. Such as a molecule of oxygen consist of atoms of oxygen Hence it know as diatomic molecule. Teacher ask some question ① What is the defination of Molecule? ② Give the example of Molecule?	Students listen carefully. Students ~~lister~~ give answers. → The smallest particle of a substance that has all of the physical and chemical properties of that substance. → Example of Molecule H_2O (Water), N_2 (nitrogen) O_3 (Ozone), CaO (calcium oxide).

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specificat…	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
पुनरावलोकन : (Recapitulation)		① To strength acqu… knowledge. ② To revise the topic. ③ To recall the gain… knowledge. ④ To test Student… knowledge. ⑤ To summerise the given topic.	Teacher summaries the topic and ask some question on it. ① What is the charge of proton? ② Ozone is a molecule? ③ Which is the example of molecule compound?	Students give answere. → The charge of proton is +ve. → Yes. Ozone a molecule it made up of threee oxygen atoms. → Water (H_2O) is the molecule compound.
गृहपाठ : (Home-Work)		① To develop the habi… of self study. ② To develop writin… skill and implem… ntation of Studen… ③ To use leisure time at home.	Teacher write Home work on the black board. Atoms of most elements are not able to exist independently Name two atoms which exist as independent atom.	Students Note down their Home work in note book.

फलक - लेखन (Black-Board Writing)



अभिप्राय (Remarks)

Examples were proper and related to the topic.
Good command on voice.

Bigni

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) :

विषय (Subject) : Chemistry

विद्यालयाचे नांव (School Name) : Nagar Parishad High School, Sacner.

विषयांश (Topic) : Metal and Non metal

दिनांक (Date) :

उपविषयांश (Sub-Topic) : ① Metal ② Non Metal.

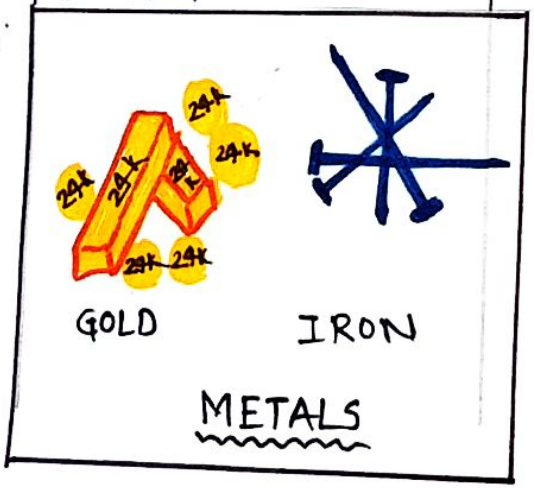
इयत्ता (Class) : 10th

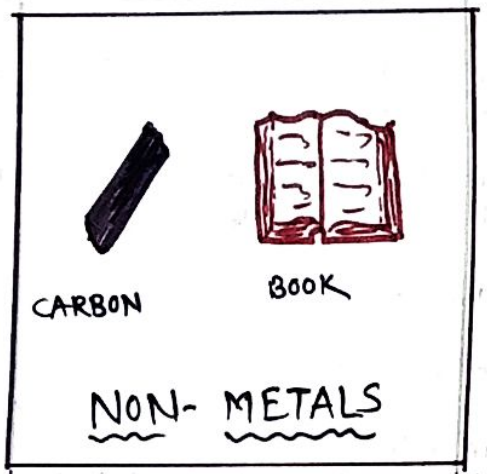
पाठ साहित्य (Teaching Aids) : Model, duster, chalk, black board, Pointer etc.

पूर्वज्ञान (Previous Knowledge) :

तासिका (Period) : 4

वेळ (Time) : 30 Min

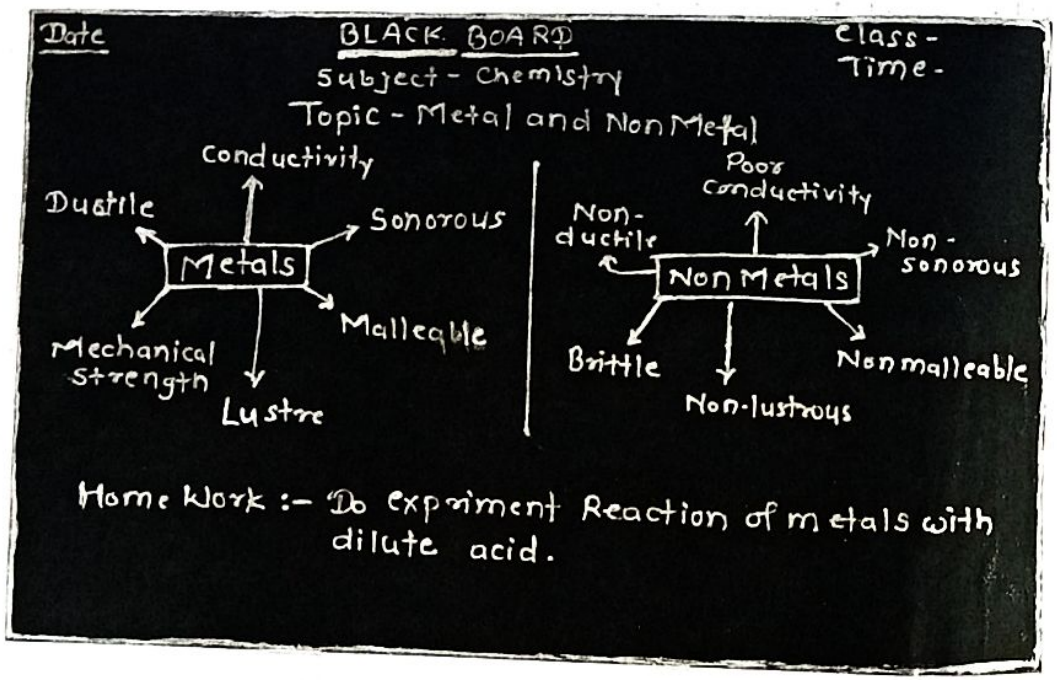
पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specificatio	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmosphere in class ③ To correlate Previous knowledge to present topic ④ To let the student know the importan of the topic. ⑤ To develop scientific attitude.	Teacher asks some question based on previous knowledge ① Did you observed that there are different kind of Hard material around you? ② Did you observed that few of the conductor of electricity. ③ Did you observed that many object are lustusers ④ Did you observed that many solid molecules?	Students give expected answer. → Aluminium, iron, Steel etc. gold, Silver etc. → Iron, Aluminium etc → Gold, Silver, Aluminium etc. → dry ice, frozen carbondioxide, rocks, bricks, most metals etc
हेतूकथन : (Statement of Aim)	So today we are going to learn about		"Metal and Non Metal."	
विषय प्रतिपादन : (Presentation)	① Metal  		Teacher explains about the ~~index to~~ 'Metal'. Metal exist mainly insolid state the metals namely, mercury and gallium exist in liquid state at room temperature. Metals possess luster. The metallic luster goes on decreasing due to exposure to atmospheric oxygen and moisture and also in presence of some reactive gases. Metal have properties namely ductility	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specificatio	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
		knowledge - Student recognize and tell about Metals and Examples of Metals.	and malleability all metals are good conductors of heat and electricity. Metal are reactive they lose electrons easily. Teacher ask some question. ① What is Metals? ② Give Example of Metals?	Students give answer. → Metals are very good conductors of heat and electricity. → Example of Metals iron, aluminium etc.
	② Non Metal 	knowledge - Students recognize and tells about ~~Meta~~ non metals and harder non-metal.	Teacher explains about Non metals. Nonmetals are in solid state while some are in gaseous state. Exception is the non metal bromine which exist in liquid state. Nonmetals do not passes luster, but iodine is the exception as its crystals are shiny not hard. Diamond which as an allotrope of carbon is the exception nonmetals have low melting and boiling point Nonmetals are bad conductors of electricity. Teacher ask some question ① What is nonmetals? ② Which is the hardest nonmetal?	Students listen carefully. Students given answer. → Nonmetals are the elements that do not conduct electricity and are neither malleable nor ductile. → Silicon carbide is the hardest Nonmetal.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specificatio
पुनरावलोकन : (Recapitulation)		① To Strengthen acquired knowled ② To revise the topic ③ To recall the gain knowledge. ④ To test Student knowledge. ⑤ To summerise the given topic.
गृहपाठ : (Home-Work)		① To develop the habit of self study ② To develop writing skill and impleme. mtation of student ③ To use leisure time at home.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher summaries the topic and ask some question. ① How are metals useful tous ? ② Why non metals are called electronegative elements.	Students give answer. → Metals are also good conductor of electricity and heat, which makes them useful for electrics and cooking pans. → Non metals form negatively charge ions by accepting electron because is called electronegative.
Teacher write Home work on the black board. ① Do expriment Reaction of metals with dilute acid.	Students Notedown their home work in notebook.

फलक - लेखन (Black-Board Writing)



अभिप्राय (Remarks)

lesson was good.
Nice presentation.
B.B. work was good.
Overall lesson was good.

Bingri

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : _____ विषय (Subject) : Chemistry दिनांक (Date) : _____

विद्यालयाचे नांव : Nagar Parishad High School Saoner. विषयांश (Topic) : Physical & chemical changes इयत्ता (Class) : 9th

(School Name)

उपविषयांश : 1) Physical Changes

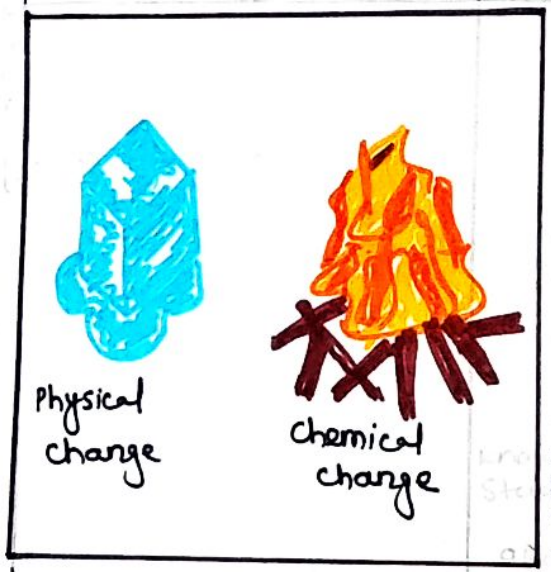
(Sub-Topic)

2) Chemical Changes

पाठ साहित्य : Model, duster, chalk, black board, Pointer etc. पूर्वज्ञान : _____ तासिका : 2 वेळ : 30 Min.

(Teaching Aids) (Previous Knowledge) (Period) (Time)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specificatio	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To aris previous knowledge. ② Create an atmo sphere in class. ③ To corelate previous knowledg to present knowledge. ④ To let the stude know the impor- tant of the topic. ⑤ To develop scientific attitude.	Teacher ask some question based on previous knowledge of the student. ① What is water made of? ② Is water a Mixture? ③ Is milk a mixture?	Students give expected answer. → A water molecule has three atoms two hydrogen (H) atoms and one oxygen (O) atom. That's why water is sometimes referred to as H_2O. → Water H_2O is a pure substance a compound made of hydroge and oxygen. → The main compounds of milk are lactose and casein and it is also called a colloidal Mixture. Therefore milk is Mixture.
हेतूकथन : (Statement of Aim)	So today we are going	to learn about	"Physical changes and	Chemical changes."
विषय प्रतिपादन : (Presentation)	① Physical Changes		Teacher explains about Physical changes. Physical changes are changes affecting the form of a chemical substance, but not its chemical composition. Physical changes are used to separate mixtures into their component compounds, but can not usually be used to separate compounds into chemical elements or simpler compounds. Physical change	Students listen carefully

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specificatio	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
			occur when objects or substance undergo a change that does not change their chemical composition. This contrasts with the concept of physical change involves a change in physical properties.	
		knowledge. Student recognize and tells about Physical change and Example of Physical change.	Teacher ask some question. ① What is the physical change?	Students give answer. → Physical change, the material involved in the change is structurally the same before and after the change.
			② Examples of Physical Change?	→ Examples of physical changes melting, freezing, condensing. breaking, crushing etc.
	② Chemical Changes		Teacher explains about Chemical changes when a substance combines with another to form a new substance called chemical synthesis or alternatively, chemical decomposition into two or more different substance. These processes are called chemical reactions and in general are not reversible except by further chemical reactions. Some reactions produce heat and are called exothermic reactions.	Students listen carefully.
		ledge - lent recognize and tells ut chemical changes.	Teacher ask some question. ① What is chemical change?	Students give answer. → a change of materials into another, new materials with different properties and one or more than one new substances are formed.
			② Example of chemical changes?	→ Chemical changes Example are color change, formation of a precipitate, formation of a gas, odor change, temperature change

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specificatio	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
पुनरावलोकन : (Recapitulation)		① To strengthen acquired knowledge ② To revise the topic ③ To recall the gain knowledge. ④ To test Student knowledge. ⑤ To summerise the given topic.	Teacher summaries the topic and ask some question. ① Why do we water crops ? ② Can humans create water?	Students give Answer. → Plants need water to grow Plants are about 80-95% water and need water for multiple reaso as they grow including for Photosynthesis, for cooling and to transport minerals and nutrients from the soil. → Humans create water, but it would be an extremely dang- erous process too create water oxygen and hydrogen atom
गृहपाठ : (Home-Work)		① To develop the habit of self study ② To develop writin skill and implem entation of Student ③ To use leisure time at home.	Teacher write Home work on Black board. How is plant air important ?.	Students Note down their Home work in Book.

फलक - लेखन (Black-Board Writing)

Date

BLACK BOARD

Class-

Time-

Subject- Chemistry

Topic - Physical Change and Chemical Change

Physical Change	Chemical change
- easily reversible - no new product, - often just a State change. - eg. ice melting.	- not easily reversed - new product(s) formed. - reactant used up - Often heat / light / sound / fizzing occurs. - electricity may be produced - a precipitate may form - eg. wood burning.

Home Work - How is plant air important ?

अभिप्राय (Remarks)

lesson was taken.
Recapitulation was proper.

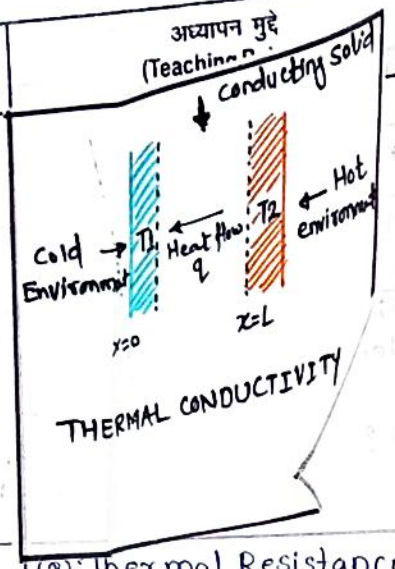
पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : _____ विषय (Subject) : _____ दिनांक (Date) : _____

विद्यालयाचे नांव : _____ विषयांश (Topic) : Thermal conductivity उपविषयांश (Sub-Topic) : ① Thermal conductivity इयत्ता (Class) : 9th.
(School Name)

पाठ साहित्य (Teaching Aids) : Model, duster, chalk, black board. etc. पूर्वज्ञान (Previous Knowledge) : ② Thermal Resistance तासिका (Period) : 3 री वेळ (Time) : 45 min

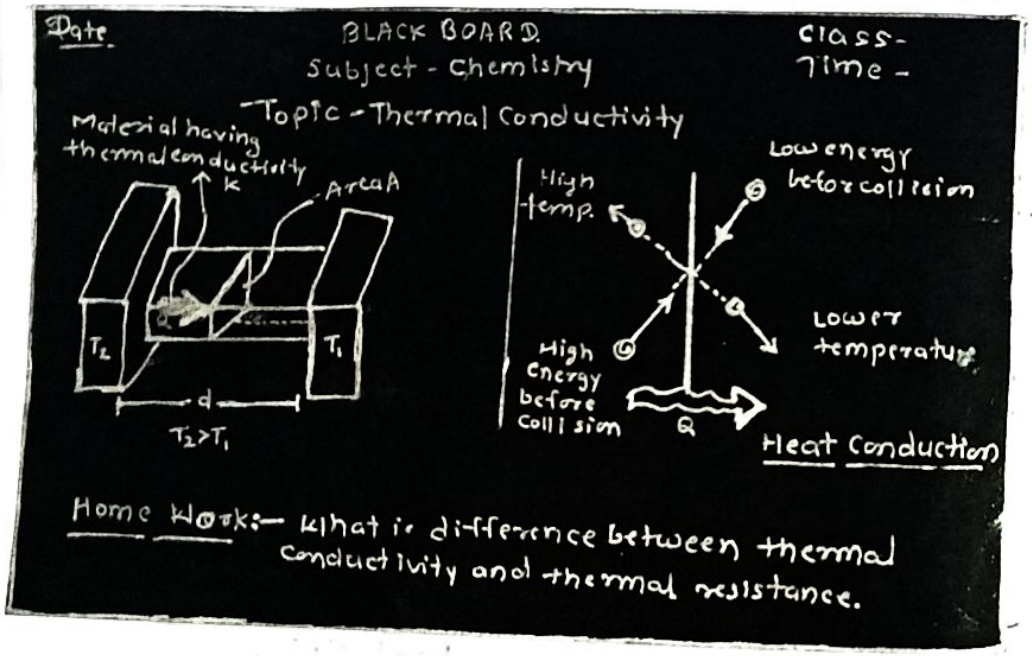
पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specificati	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmospher in clas ③ To corelate Previous knowled to present topic ④ To let the Stude know the impor- tant of the topic. ⑤ To develop scient ific attitude.	Teacher ask some question based on previous knowledge of the student. ① What is heat explain ? ② What is the sources of heat ? ③ How is heat produced? ④ What are the 3 types of heat ?	Students give expected answer. → Heat is the transfer of kineti energy from one medium or object to another, or from an energy source to a medium or object. → The sun electrical appliances burning wood, eating food and friction → When a rise in temperature causes atoms and molecule to move faster and collide with each other. → 3 types of heat is conductior radiation and convectior
हेतूकथन : (Statement of Aim)	So today we are going	to learn about	"Thermal conductivity and	
विषय प्रतिपादन : (Presentation)	① Thermal conductivity.		Teacher explains about thermal Conductivity. The thermal conductivity of a material is a measure of its ability to a particular material conduct heat. It is commonly denoted by k. Heat transfer occurs at a lower rate in materials of low thermal conductivity than in materials of high thermal conductivity The de-fining equation for thermal conductivity is	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching P...)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specificatio...)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	 THERMAL CONDUCTIVITY	knowledge - Student recognized and tell about thermal conductivity. and Examples of thermal conductivity.	$q = -K\nabla T$, where q is the heat flux, k is the thermal conductivity, ∇T is the temperature gradient. Teacher ask some question. ① What is thermal conductivity ② Give Example of thermal conductivity ?	Students give answer. → Thermal Conductivity refers to the amount / speed of heat transmitted through a material → Example of thermal conductivity ⊙ spoon getting hot when in contact with hot vessel. ② Heat from liquid makes the cup hot.
	② Thermal Resistance.	knowledge - Student recognize and tells about thermal Resistance and Example of thermal Resistance.	Teacher explains about thermal Resistance. Thermal resistance is the inverse of thermal conductance. It is a convenient measure to use in multicomponent design since thermal resistances are additive when occurring in series. There is also a measure known as the heat transfer coefficient. the quantity of heat that passes per unit time through a unit area of a plate of particular thickness when its opposite faces differ in temperature by one kelvin. Teacher ask some question. ① What does thermal resistance mean? ② What is thermal resistance example ?	Students listen carefully Students give answer. → The ratio of the temperature difference between the two faces of a material to the rate of heat flow per unit area. → The thermal resistance is a characteristic of a heat sink

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specificatio
पुनरावलोकन : (Recapitulation)		① To strengthen acquired knowled ② To revise the topi ③ To recall the gair knowledge. ④ To test student knowledge. ⑤ To summerise the given-topic.
गृहपाठ : (Home-Work)		① To develop the habit of selfstudy. ② To develop writi skill and implem tation of student ③ To use leisure time at home.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher Summaries the topic ① How does thermal conductivity depend on temperature?	Students give Answer. → Thermal conductivity is the property of a material to condu heat. Heat transfer occurs at a lower rate across materials of low thermal conductivity than across materials of high thermal conductivity.
② How is thermal resistance measured?	→ By taking the thickness of a sample and dividing it by its thermal conductivity.
Teacher write Home work on black board. what is difference between thermal conductivity and thermal resistance.	Students Note down their Home work in Note Book.

फलक - लेखन (Black-Board Writing)



अभिप्राय (Remarks)

lesson was good
Teaching aid was used.
Presentation was good.

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : _____ विषय (Subject) : Chemistry

विद्यालयाचे नांव : (School Name) Nagar Parishad High School, Saomer

विषयांश : (Topic) Isomerism

दिनांक (Date) : _____

उपविषयांश : (Sub-Topic) a). Structural isomerism b). Stereochemistry.

इयत्ता (Class) : 9th

पाठ साहित्य : (Teaching Aids) Model, duster, chalk, black board, Pointer etc.

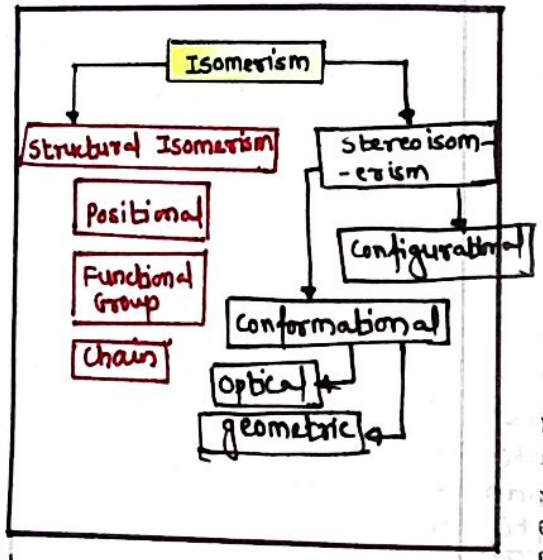
पूर्वज्ञान : (Previous Knowledge) _____

तासिका : (Period) 2n

वेळ : (Time) 90 min

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specificati	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmospher in clas ③ To corelate previous knowled to present topic. ④ To let the Stude know the importa of the topic. ⑤ To develop scientific attitude.	Teacher ask some question based on previous knowledge of the student. ① Whats is an atom ? ② Give example of atom ? ③ What is a molecule ? ④ What are example of molecules ?	Students give expected answer. → An atom consists of a central nucleus that is surrounded by one or more negatively charged electrons. → Example of atom is hydrogen (H) and neon (Ne) → The smallest particle of a substance that has all of the physic and chemical properties of that substance. → Example of molecules – H_2O, N_2, O_3, CaO, $C_6H_{12}O_6$, NaCl.
हेतूकथन : (Statement of Aim)	So today we are going	to learn about	" Isomerism."	
विषय प्रतिपादन : (Presentation)	Isomerism		Teacher explains about Isomerism ~~and~~ The phenomenon that two or more different chemical compounds have the same molecular formula is called isomerism, from the Greek isos meaning "equal", and meros meaining "Part" a concept and term introduced by the swedish scientist in 1830. There are two typer of isomerism.	Students listen carefully

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specifica	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	a). Structural isomerism	knowledge - Student recogn and tells about Structural Isomerism and typs of structural Isomerism.	Structural isomerism, also called constitutional isomerism isomers differ from each other in that the constituent atoms are linked in different ways and sequences. Teacher ask some question. ① What is structural isomerism? ② What are the different types of Structural Isomerism?	Students give answer → Isomerism in which the molecules have the same molecular formula but different structural formula is called structural isomerism. → Chain, position, functional group are different types of structural Isomerism.
	b). Stereochemistry.	owledge - dent recogni d tells about ereoisomers rmed and important of Stereoisomers	Teacher explains about Stereoisomerism or spatial Isomerism is a form of isomerism in which molecule have the same molecular formula and sequence of bonded atom (constitution) but differ in the three-dimensional orientations of their atoms in space. Teacher ask some question. ① How are Stereoisomers formed? ② Why are Stereoisomers important?	Students listen carefully. Students give answer. → The simplest forms of Stereoisomers are cis and trans isomers, both of which are created by the restricted rotation about a double bond or ring system. → The importance of Stereoc-hemistry is pharmaceutical production and the break down of drugs in the body.



पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specificati
पुनरावलोकन : (Recapitulation)		① To Strengthen acquired knowled ② To revise the topic. ③ To recall the gain knowledge. ④ To test Studen knowledge. ⑤ To summerise the given topic.
गृहपाठ : (Home-Work)		① To develop the habit of self Study ② To develop writin skill and implem entation of Studen ③ To use leisure time at home.

फलक - लेखन (Black-Board Writing)

Date

BLACK BOARD

Class -

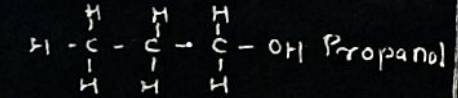
Time -

Subject - Chemistry

Topic - Isomerism

* Isomers.

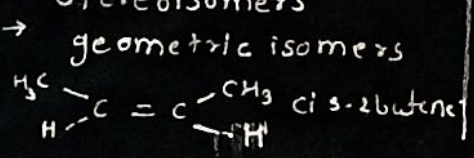
→ Structural or constitutional isomers.



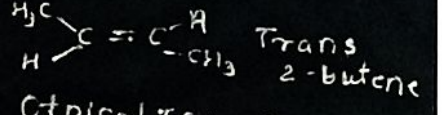
Propanol

* Stereoisomers

→ geometric isomers

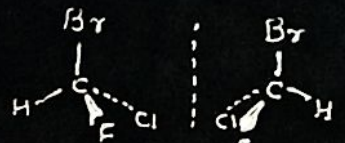


cis-2butene



Trans 2-butene

→ Optical Isomers.



Mirror

Home Work - How do you identify Stereoisomers?

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher Summarise the topic ① What is the example of isomerism ? ② What is Stereoisomerism and example?	Students give answer. → Example of Isomers - Ethyl alcohol and dimethyl ether are isomers of each other as both the compound have the same molecular formula - C_2H_6O while differ Structural formula. → Stereoisomers are isomers that have the same compositio but that differ in the orientati of those part in space
Teacher write Home work on black board. ① How do you identify Stereoisomers ?	Students Note down their Home work in Note Book.

अभिप्राय (Remarks)

lesson was good.

objectives were gained.

Bingwi

पर्यवेक्षकाची सही

(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) :

विद्यालयाचे नांव : Nagar Parishad high School Saoner.
(School Name)

पाठ साहित्य : Model, duster, chalk, black board, Pointer etc.
(Teaching Aids)

विषय (Subject) : Chemistry

विषयांश : Combustion and flame
(Topic)

पूर्वज्ञान :
(Previous Knowledge)

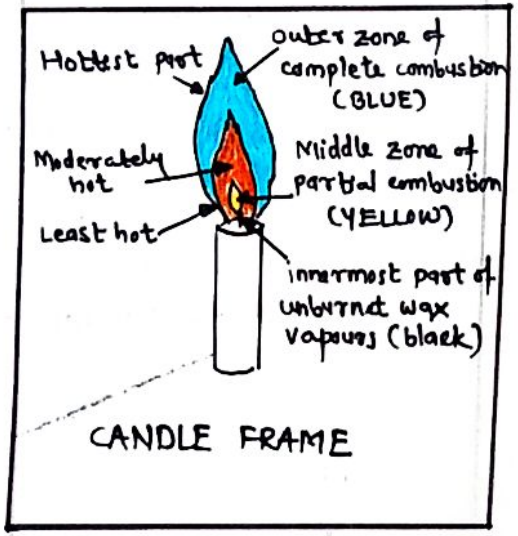
दिनांक (Date) :

उपविषयांश : ① Combustion
(Sub-Topic) ② Flame

इयत्ता (Class) : 8th

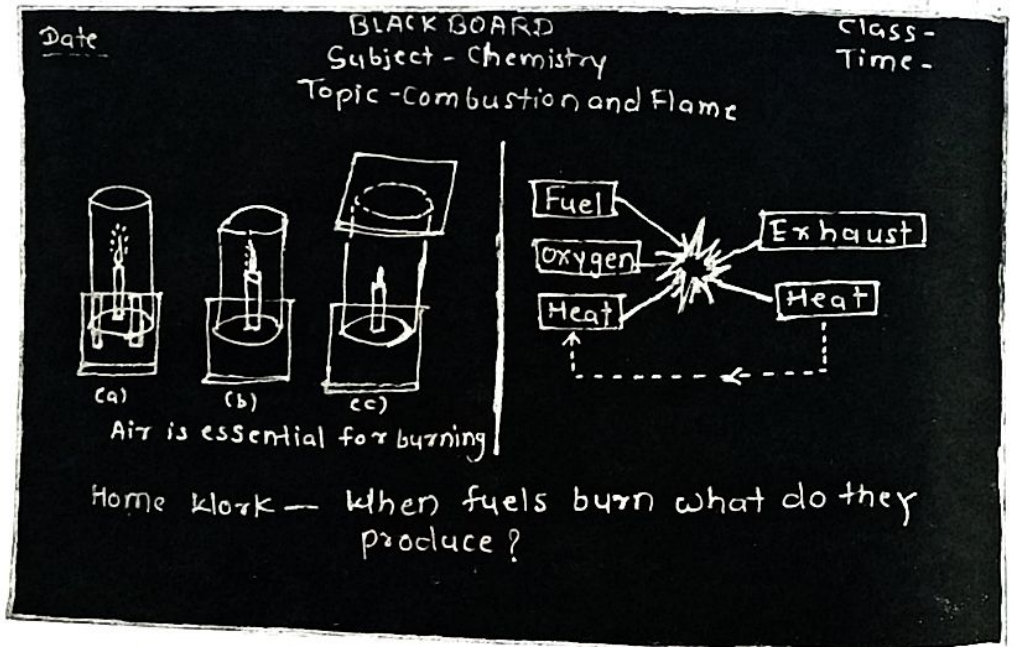
तासिका : 4th (Period) वेळ : 45 min (Time)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specificat	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmospher in clas ③ To corelate previous knowled to present topic ④ To let the Student know the import ant of the topic ⑤ To develop scientific attitude.	Teacher ask some question based on previous knowledge of the Student. ① What is Heat ? ② How is heat made ? ③ What is heat examples ?	Students give expected answer. → Heat is the transfer of kinetic energy from one medium or object to another, or from an energy source to a medium or object. → It is the motion of particles that creates a form of energy called heat energy that is Present in all matter. → The temperature of a cup of coffee may feel hot if you put your hand around it. It is hot because heat from the coffee is transferred to the cup.
हेतूकथन : (Statement of Aim)	So today we are going to learn about		" Combustion and flame."	
विषय प्रतिपादन : (Presentation)	Combustion		Teacher explains about Combustion. Combustion is a redox chemical reaction that takes place between fuel and an oxidant to give a mixture of gases and heat and light. Combustion does not always give rise to fire. But when it does, the flames are an indicator of the reaction. Incomplete combustion, the reactants get oxidized or burn in oxygen to give a limited	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specifica	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
		knowledge - Student recogn. ized and tell about combustion	Substance that easily catch fire are combustible substances Example- paper, coal, wood etc Substance that do not catch fire easily are non-combustible substances. Example water, glass, sand etc. Teacher ask some question. ① Define combustion. ② What name is given to the substances which can burn easily?	Students give answer. → Combustion is the process of burning of substances to give heat and light. → Combustible substances.
	Flame  	owledge - udent recogni 'd and tell bout flame and exa mple of flame.	Teacher explains about Flame - A flame can be defined as a region where gaseous elements burn, generating heat and light. All combustible materials, whether liquid or gaseous, emit flames as they burn. Both the combustible substance and the combustion's supporter must be gases in order for combustion to result in a flame. Teacher ask some question. ① What is the definition of flame ? ② Give two examples of inflammable substances.	Students listen carefully. Students give answer. → A flame is a region where gaseous component burn, releasing heat and light in the process. → Example of inflammable substances is Petrol and LPG.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specifica
पुनरावलोकन : (Recapitulation)		① To Strengthen acquired knowledg ② To revise the topic ③ To recall the gain knowledge ④ To test Student knowledge. ⑤ To summerise the given topic.
गृहपाठ : (Home-Work)		① To develop the habit of self study ② To develop writing skill and imple mentation of student ③ To use leisure time at home

फलक - लेखन (Black-Board Writing)



अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher summaries the topic combustion and flame. ① When does a substance start burning ? ② When does a fire brigade arrive ? ③ Give two examples of the combustible substances.	Students give answer. → A substance starts burning when its ignition temperature is reached. → When the building catches fire, a fire brigade is called to put off the fire. → Examples of the combustible substances are kerosene oil and wood.
Teacher write Homework on black Board. When fuels burn what do they produce ?	Students Note down their Home work in Note Book.

अभिप्राय (Remarks)

All examples given was good and proper.

B. B. work was good.

Explain nicely

Singai

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) :

विद्यालयाचे नांव : Nagar Parishad High School Saoner.
(School Name)

पाठ साहित्य : Model, duster, chalk, black board, Pointer etc
(Teaching Aids)

विषय (Subject) : Chemistry

दिनांक (Date) :

विषयांश : Force and Pressure
(Topic)

उपविषयांश : ① Force
(Sub-Topic) ② Pressure.

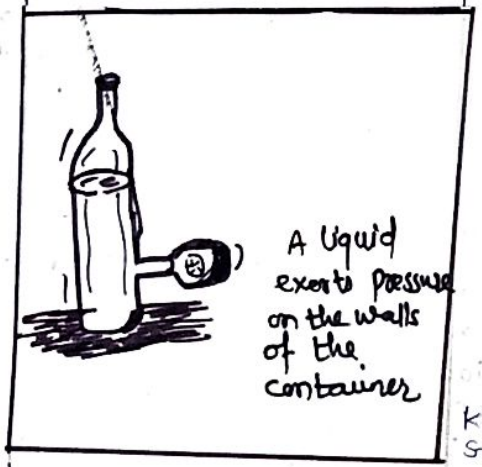
पूर्वज्ञान :
(Previous Knowledge)

इयत्ता (Class) : 9th

तासिका : 2nd (Period)

वेळ : 45 min (Time)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specifica	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previou knowledge. ② To create an atmospher in class. ③ To correlate previous knowle to present topic ④ To let the stud know the impor tant of the topic ⑤ To develop scientific attitude.	Teacher ask some question based on previous knowledge of the Student. ① Define atmosphere? ② Name the force due to which planets revolve around the sun. ③ What is meant by force of gravitation? ④ When does a force come into play ?	Students give expected answer. → The air surrounding us is known as atmosphere. → Gravitational force. → The force of attraction exerted by the earth on all objects is called the force of gravitation. → An object's interaction with another object results in a force between the two objects.
हेतूकथन : (Statement of Aim)	So today we are going	to learn	about "Force and Pressure."	
विषय प्रतिपादन : (Presentation)	Force		Teacher explainsabout Force When an object is displaced or tends to displace from its original position, it requires an external agent which is called force. It is of two types push force and pull force. Force is a vector quantity as it has both magnitude and direction. It can change the state of the motion. It can	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण Objectives with Specificat	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	 A ball at rest begins to move when a force is applied on it.	knowledge - Student recogni ze and tells about force and give examp of force.	can change the direction of an object. It can change the shape of an object. Teacher ask some question. ① What is force? ② Give example of force?	Students give answer. → Force is defined as the physical quantity which has the capabili to change the shape and speed of the body. → Pushing a box at rest on the table brings the box in motion.
	② Pressure		Teacher explains about Pressure. Pressure on an object is defined as the force acting on its squar unit surface. Pressure = Force / Area of Surface. Its unit is net newton / m^2. The pressure of the air around us is known as atmospheric pressure. both liquid and gases exert pressure on the surface. It can be understood with an example. If we filled a balloon with water or air, then after a certain amount of time it will burst. Teacher ask some question. ① What is pressure? ② What is the unit of pressure ?	Students listen carefully. Students give Answer → The amount of force exerted on surface per unit area is defined as pressure. → The SI unit of pressure is pascal (represented as Pa) which is equal to one newton per square metre. (N/m^2 or $kg\ m^{-1}\ s^{-2}$).
	 A liquid exerts pressure on the walls of the container	knowledge - Student recognize and tells about Pressure and unit of pressure.		

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specifica
पुनरावलोकन : (Recapitulation)		① To strengthen acquired knowle ② To revise the top ③ To recall the gai knowledge. ④ To test Studen knowledge. ⑤ To summerise the given topic
गृहपाठ : (Home-Work)		① To develop the habit of self Stud ② To develop writin skill and implem entation of Student. ③ To use leisure time at home.

फलक - लेखन (Black-Board Writing)

Date - BLACK BOARD Class -

Subject - Chemistry Time -

Topic - Force and Pressure

FORCE

- Force is the push and pull of an object.
- Its SI unit is 'Newton' denoted by N.
- It is measured by spring balance or dynamo-meter.
- It is a vector Quantity.
- It applies to faces, vertices and edges.

PRESSURE

- Pressure the force applying Per unit area.
- It's SI unit is Pascel, denoted by 'Pa'.
- It is measured by Mano meter.
- It is a scalar quantity.
- It applies to faces only.
- Its velocity cannot be Changed.

Home work – Using a monometer how can you show that the liquid pressure remains same at the same depth ?

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher summaries the topic. ① What happens to the speed of a body when a force is applied? ② What is meant by contact force? ③ Give an example to show that force can change the shape of an object?	Students give answer. → The speed of a body can be increased or decreased by applying force. → A force which is applied only when it is in contact with an object is called contact force. → Pressing a rubber ball with the hand changes its shape.
Teacher write Home work on black board. Using a manometer how can you show that the liquid pressure remains same at the same depth?	Students Note down their Home work in Note book.

अभिप्राय (Remarks)

lesson Plan was good.

lesson was good.

Good command on teaching

Singvi

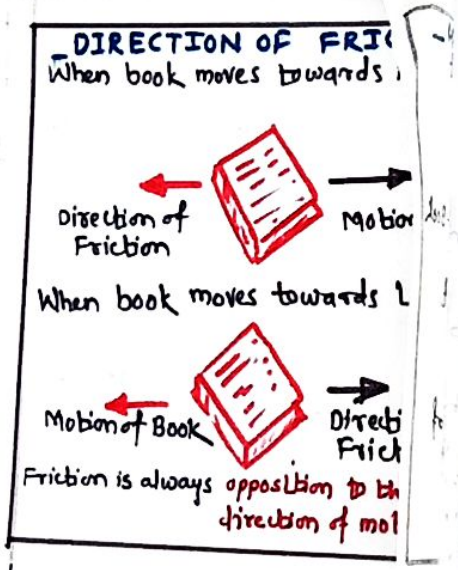
पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : _____ विषय (Subject) : Chemistry

विद्यालयाचे नांव : (School Name) Nagar Parishad High School saoner. विषयांश : (Topic) Friction दिनांक (Date) : _____

पाठ साहित्य : (Teaching Aids) Model, duster, chalk, black board, pointer etc. पूर्वज्ञान : (Previous Knowledge) _____ उपविषयांश : (Sub-Topic) ① Friction ② Causes of Friction इयत्ता (Class) : 8th. तासिका : (Period) 5th वेळ : (Time) 40 min

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specifica	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmosphere in class. ③ To correlate previous knowled to present topic ④ To let the Studi know the impor tant of the topic. ⑤ To develop scientific attitude.	Teacher ask some question based on previous knowledge ① What is force ? ② What is motion ? ③ What is direction ? ④ What is heat ?	Students give expected answer. → A force is a push or pull on an object that is caused by an interaction with another object. → When an object or a body changes it's position with respect to time then the body is said to be in motion. → A direction is the general line that someone or something is moving or pointing in. → The flow of energy from a warm to a cooler object.
हेतूकथन : (Statement of Aim)	So today we are going	to learn	about "Friction."	
विषय प्रतिपादन : (Presentation)	Friction		Teacher explains about Fraction. It is a force which opposes motion of one object over another object in contact with it. In easy language, It is a force which makes moving object stop. Friction always acts in the opposite direction of motion. If we push a book on table from left to right Force of friction moves in opposite direction from right to left	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specificat	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
		knowledge- Student recognize and tell about friction and example of friction.	Similarly, if we push a book on table from right to left force of friction moves in opposite direction from left to right. Teacher ask some question. ① What is friction? ② Give example of friction?	Students give answer. → Friction is a force that opposes motion between any surfaces that are touching. Friction can work for or against us. → Example: putting sand on an icy sidewalk increases friction so you are less likely to slip. On the other hand, too much friction between moving parts in a car engine.
	Causes of friction 	knowledge— Student recognized and tells about causes of ~~fra~~ friction and main source of friction.	Teacher explains about causes of friction. If we take a microscope and zoom in the surface of two objects. we see that both the surface have some irregularities. When we try to move the object, the irregularities gets interlocked. This causes friction so, rougher the surface, more the irregularities. Hence, more friction smoother the surface, less the irregularities. Hence less fraction. Teacher ask some question. ① What is cause of friction? ② What is the main source of friction?	Students listen carefully. Students give answer. → Friction is caused due to the irregularities on the two surfaces in contact. → The causes of resistive force are molecular adhesion, surface roughness and deformations.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specifica
पुनरावलोकन : (Recapitulation)		① To Streng-then acquired knowled ② To revise the top ③ To recall the gain knowledge. ④ To test Studen knowledge. ⑤ To summerise the given-topic.
गृहपाठ : (Home-Work)		① To develop the habit of self Study ② To develop writing skill and imple mentation of Student. ③ To use leisure -time at home.

फलक - लेखन (Black-Board Writing)

Date

BLACK BOARD.
Subject - Chemistry
Topic - Fraction

Class
Time

FRACTION

① Proper Fractions :-
Numerator is smaller than the denominator.

$\frac{5}{6}$

② Improper Fractions :-
Numerator is equal or greater than the denomi-nator.

$\frac{8}{6}$

③ Mixed Fraction :- consists of a whole Number and a proper fraction.

$1\frac{2}{6}$

H.W :- Four children were arked to arrange force due to rolling Static and Sliding frictions in a decreasing order.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher Summaries the topic and ask somequestion. ① What are effects of friction ? ② What are the type of friction ?	Students give answer. → It produces heat, that helps in heating parts of any object or to warm ourselves. → There are three kinds of friction. rolling friction, Starting friction, and sliding friction.
Teacher write Home work on black Board. ① Four children were asked to arrange force due to rolling Static and sliding frictions in a decreasing order.	Student Note down their Home work in Note book.

अभिप्राय (Remarks)

Nicely tackle with Students.
Explaination was proper.
Teaching aid was used.

Singhvi

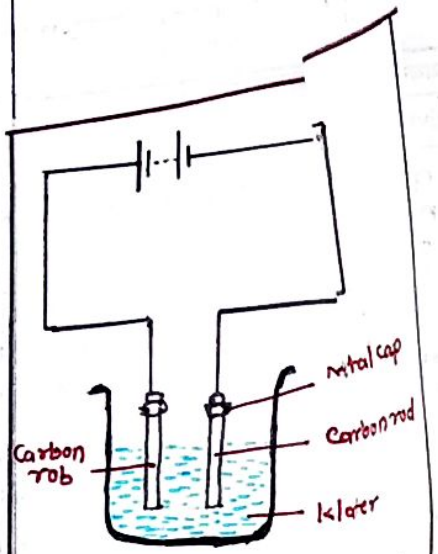
पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.): Lesson-14 | विषय (Subject): Chemistry

विद्यालयाचे नांव (School Name): Nagar Parishad High School Sacner. | विषयांश (Topic): | दिनांक (Date):

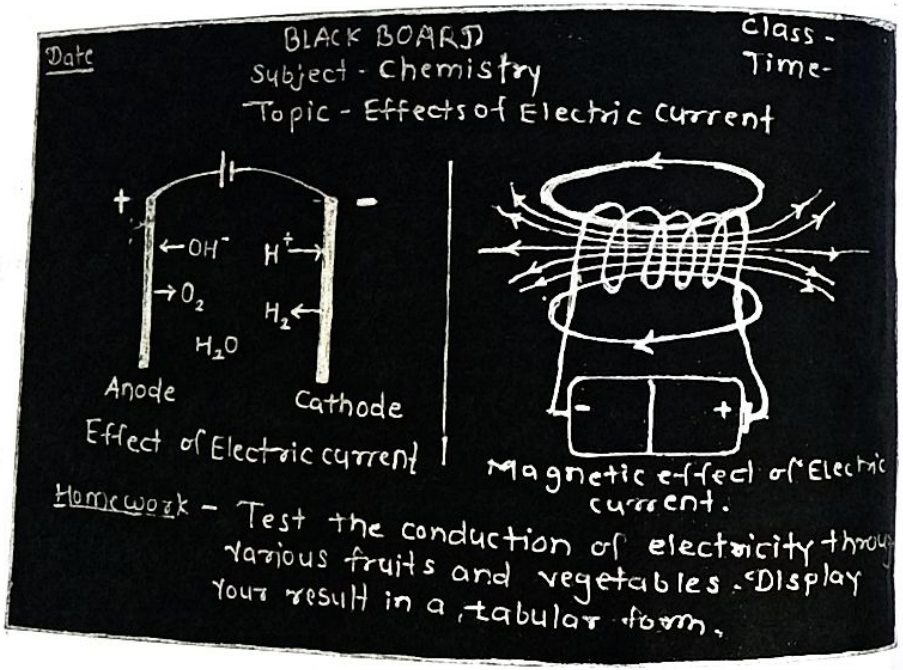
पाठ साहित्य (Teaching Aids): Model, duster, chalk, black board, Pointer etc. | पूर्वज्ञान (Previous Knowledge): | उपविषयांश (Sub-Topic): Activity on Passing current through water. | इयत्ता (Class): 8th | तासिका (Period): 5th | वेळ (Time): ~~30~~ min

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specifics)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmosphere in class. ③ To correlate previous knowledge to present topic. ④ To let the students know the importance of the topic. ⑤ To develop scientific attitude.	Teacher asks some question based on previous knowledge. ① What is current ? ② What is an electrode ? ③ What is Solution ?	Students give expected answer. → Electric current is the flow of electric charges (electrons) in an electric circuit. → An electrode is a conductor of electricity that can carry electric current into non-metals and other poor conductors of electricity. → A solution is a homogeneous mixture of two or more components in which the particle size is smaller than 1 nm.
हेतूकथन : (Statement of Aim)	So today we are going to learn about, "Chemical effect of Electric current."			
विषय प्रतिपादन : (Presentation)	Activity		Teacher explains about Passing current through water. Take out carbon rods carefully from two discarded cells. Clean their metal caps with sand paper. Wrap copper wires around the metal caps of the carbon rods and join them to a battery. We call these two rods electrodes. (Instead of carbon rods you may take two iron nails about 6cm long) Pour a cupful of	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specifica	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	 Fig : Passing current through Water		water in a glass / plastic bowl. Add a teaspoonful of salt or a few drops of lemon juice to water to make it more conducting. Now immerse the electrodes in this solution. Make sure that the metal caps of carbon rods are out side the water. Wait for 3-4 minutes. Observe the electrodes carefully. Do you notic any gas bubbles near the electrodes. ? Can we call the change taking place in the solution a chemical change? When an electric current is passed through a conducting solution, some chemical reaction takes place in the solution. This is among the chemical effect of electric current.	Students listen carefully.
		knowledge - Student recognize and tells about electric current and example of it. Application - Student tell application of chemical effect.	Teacher ask some question. ① What are the chemical effects of electric current give example? ② What are the uses of chemical effect? ③ What is the application of chemical effect?	Students give answer. → When an electric current is passed through water, then water dissociates into hydrog and oxygen. → Parts of a bicycle and motor bike are chrome plated through electroplating. → Electroplating and electrolysis are the applications of chemical effect of electric current.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specifica
पुनरावलोकन : (Recapitulation)		① To strengthen acquired knowledg ② To revise the top ③ To recall the gai knowledge ④ To test student knowledge. ⑤ To summerise the given topic.
गृहपाठ : (Home-Work)		① To develop the habit of self Stud ② To develop writin skill and imple -mentation of Student. ③ To use leisure time at home.

फलक - लेखन (Black-Board Writing)



अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher summaries the topic and ask some question. ① What are the types of current ? ② What are the chemical effects of current ?	Students give answer. → There are two kinds of current electricity - direct current (DC) and alternating current (AC). → When an electric current flows through a conducting solution, within the solution some chemical reactions take place.
Teacher write Home work on black board. ① Test the conduction of electricity through various fruits and vegetables. Display your result in a tabular form.	Students Note down their Home work in Note book.

अभिप्राय (Remarks)

lesson was good.
Presentation was good.
time managed properly

पर्यवेक्षकाची सही
(Sign. of Supervisor)

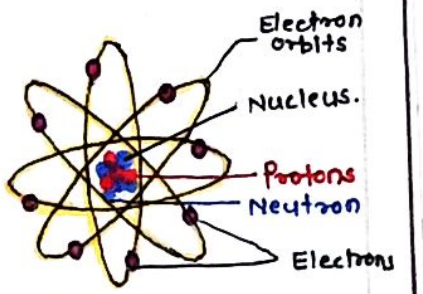
पाठ क्रमांक (Lesson No.) : 3 विषय (Subject) : Chemistry

विद्यालयाचे नांव : Nagar Parishad High School saoner. विषयांश (Topic) : Atomic Structure दिनांक (Date) :

पाठ साहित्य (Teaching Aids) : model, duster, chalk, black board, Pointer etc. पूर्वज्ञान (Previous Knowledge) :

उपविषयांश (Sub-Topic) : ① Subatomic particles ② Atomic Structure. इयत्ता (Class) : 8th. तासिका (Period) : 2 nos वेळ (Time) : 30 min

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specifica	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previou knowledge. ② To create an atmosphere in class. ③ To correlate previous knowle to present topic. ④ To let the Stud know the impor tant of the topic. ⑤ To develop scientific attitude.	Teacher asks some question based on previous knowledge ① What is atom ? ② What is electrons and protons ? ③ What is nucleus of a cell ? ④ What is electron ?	Students give expected answer. → An atom is a particle of matter that uniquely defines a chemical element. → Electrons are negatively charged particles with negligible mass. → Nucleus is generally spherical body and located in the centre of the cell → An electron is a negatively charged subatomic particle that can be either bound to an atom or free
हेतूकथन : (Statement of Aim)	So today we are going	to learn	about " Atomic Structure".	
विषय प्रतिपादन : (Presentation)	Subatomic Particles		Teacher explains about subatomic particles. Atomic Structure refers to the structure of an atom comprising a nucleus in which the protons (+ve) and neutrons (neutral) are present The negatively charged particles called electrons revolve around the centre of the nucleus. The advances in atomic structur and quantum mechanics haveled to the discovery	Students listen carefully

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
		knowledge Student recog. nize and tells about subatomic particles
	Atomic Structure	
	 Fig- The Structure of ATOM	knowledge— Student recog. nize and tells about atomic structure.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
of other fundamental particle The discovery of subatomic particles has been the base for many other discoveries and inventions. Teacher ask some question. ① What are subatomic Particles? ② Which subatomic particles are electrically charged?	Students give answer. → Subatomic particles are the particles that constitute an atom. Generally this term refers to protons, electrons, and neutrons. → Protons and electrons are the only two subatomic particles with electrical charges.
Teacher explains about Atomic Structure. The atomic structure of matter is made up of protons, electrons and neutrons. The protons and neutrons make up the nucleus of the atom, which is surrounded by the electrons belonging to the atom. The atomic number of protons in its nucleus. Neutral atoms have equal numbers of protons and electrons. However atoms may gain or lose electrons in order to increase their stability and the resulting charged entity is called an ion. Teacher ask some question. ① What is atomic Structure?	Students listen carefull. Students give answer. → Atoms consist of an extremely small, positively charged nucleus surrounded by a cloud of negatively charged electrons.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		① To strengthen acquired knowledge ② To revise the topic. ③ To recall the gain knowledge. ④ To test student knowledge. ⑤ To summerise the give topic.
गृहपाठ : (Home-Work)		① To develop the habit of self study ② To develop writing skill and implementation of student ③ To use leisure time at home.

फलक - लेखन (Black-Board Writing)

Date

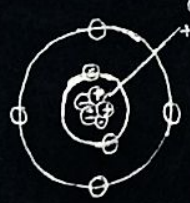
BLACK BOARD.

Class -

Time -

Subject - Chemistry.

Topic - ATOMIC STRUCTURE



Carbon atom

SUBATOMIC PARTICLES

→ Protons with a positive charge found in the nucleus of an at atom.

→ Neutrons with a neutral charge also found in the nucleus of an atom.

→ Electrons with a negative charge found outside of the nucleus in the electron cloud.

Home klork :- Draw a sketch of Bohr's Model of an atom with three shells.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher summaris the topic and ask some question. ① How do you make an atomic structure? ② What is subatomic level?	Students give answer. → The basic structure of an atom involves a nucleus and the orbiting electrons. → The subatomic scale is the domain of physical size that encompasses objects smaller than an atom.
Teacher write Home work on black Board. ① Draw a sketch of Bohr's model of an atom with three shells.	Students Note down their Home work in Note book.

अभिप्राय (Remarks)

Attractive keging was there.
Students were attentive & listen carefully.

Bingui

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 5

विषय (Subject) : Chemistry

विद्यालयाचे नांव : Nagar Parishad High School, Saoner
(School Name)

विषयांश : Acid and Base
(Topic)

पाठ साहित्य : Model, duster, chalk, black board, Pointer, etc.
(Teaching Aids)

पूर्वज्ञान :
(Previous Knowledge)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmosphere in class. ③ To correlate previous knowledge to present topic ④ To let the Student know the important of the topic. ⑤ To develop scientific attitude.
हेतूकथन : (Statement of Aim)	So today we are going	to learn
विषय प्रतिपादन : (Presentation)	Acids and Bases	

Chemistry

दिनांक (Date) :

उपविषयांश : ① Acids and Base
(Sub-Topic)

② Properties of Acid and Base.

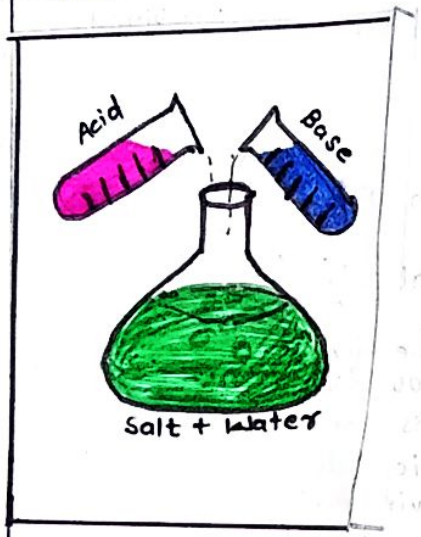
इयत्ता (Class) : 9th.

तासिका : 1st (Period)

वेळ : 90 min. (Time)

अध्ययनानुभव (Learning Experience)

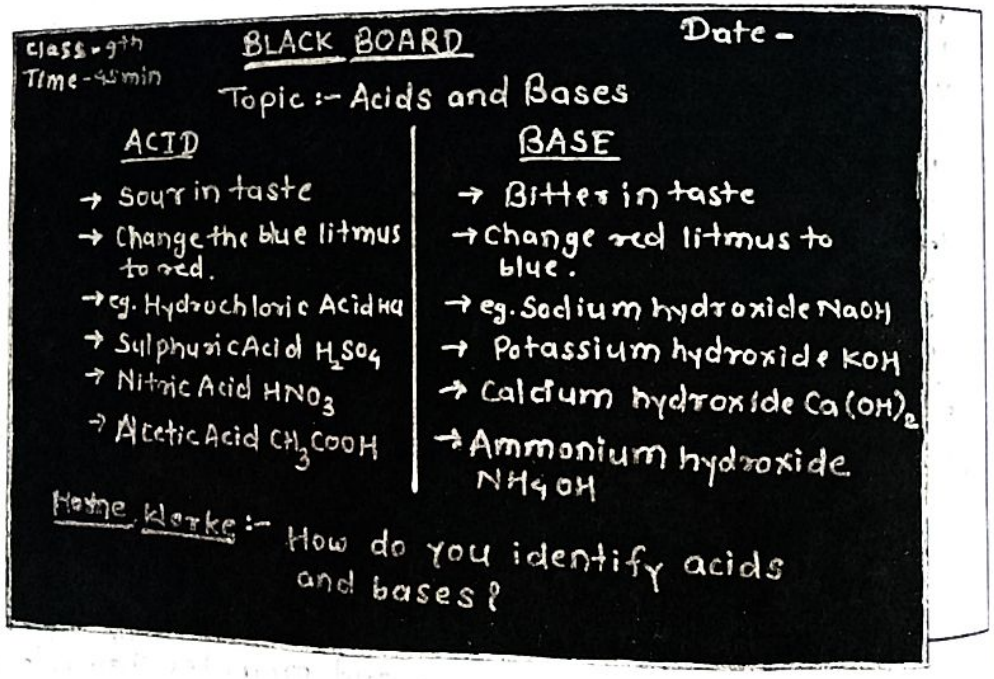
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher ask some question based on previous knowledge ① Do you test lemon? How it is,	Students give expected answer. → Yes. it is sour.
② Is lemon juice sour?	→ Sour taste is usually found in fruits like orange, grapes, lemon etc.
③ What is called compound?	→ A compound is a substance made upof two or more different chemical elements combined.
④ What is compound in Example?	→ A compound is a material composed of two or more componenents. Water, carbon dioxide and table salt.
about "Acids and Bases."	
Teacher explainsabout Acids. It is defined as a chemical compound with a sour taste and a pH value less than 7 Examples of organic acids are acetic acid (vinegar), citric acid (lemon juice), lactic acid (Milk) and organic acids are hydro-chlo-chloric acid (HCl), sulphuric acid (H_2SO_4)	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
		knowledge Student recogn- ize and tells about what is acid.
	Properties of Acids and Base. 	knowledge- Student recogn- ize and tells about How to react acid.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
nitric acid HNO_3. Base It is defined as a chemical compound which has a bitter taste and a pH value more than 7. Example are Sodium hydroxide (NaOH), Calcium hydroxide [$Ca(OH)_2$] Potassium hydroxide (KOH) Teacher ask some question. ① What is acid?	Students give answer. → An acid is any hydrogen containing substance that is capable of donating a proton (hydrogen ion) to another substance.
Teacher explains about Chemical properties of Acids and Bases. » Natural Indicators are litmus Turmeric and Red cabbage, Petals of flowers like Petunia and Geranium; Litmus is a natural, most common indic- tor used to determine the pH value of any substance. Acids change the colour of blue litmus to red while Bases change the colour of red litmus paper to blue. Synthetic Indicator are Methyl orange and Phenol- phthalein syntesized in lab to test acids and bases. Teacher ask some questin ① What is called ea acid?	Students listen carefully Students give answer. → An acid is any substance that in water solution tastes sour, changes blue litmus paper to red, reacts with some metals to liberate hydrogen, reacts with bases to form salts and promotes chemical reaction

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		① To strengthen acquired knowledge. ② To revise the topic. ③ To recall the gain knowledge. ④ To test student knowledge. ⑤ To summerise the given topic.
गृहपाठ : (Home-Work)		① To develop the habit of self Study. ② To develop writing skill and implementation of student. ③ To use leisure time at home

फलक - लेखन (Black-Board Writing)



अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher summaries the topic and ask some question on it. ① What is base? ② What is acid Example?	Students give answer. → A base is a molecule or ion able to accept a hydrogen ion from an acid. → The word acid comes from the Latin words acidus or acere, which mean 'sour', since one of the characteristics of acids in water is sour taste. vineger.
Teacher write Home work on the black board. How do you identify acids and bases?	Students note down their Home work in Note book.

अभिप्राय (Remarks)

B. B. work was good
Teaching aid was used.

Bingi

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) :

विषय (Subject) : Chemistry

विद्यालयाचे नांव : Nagar Parishad High School Saoner.

विषयांश (Topic) : Neutralization

पाठ साहित्य (Teaching Aids) : Model, duster, chalk, black board, Pointer etc.

पूर्वज्ञान (Previous Knowledge) :

उपविषयांश (Sub-Topic) : ① Neutralization ② Neutralization reaction.

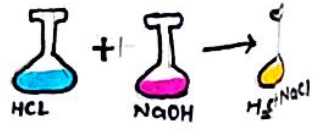
दिनांक (Date) :

इयत्ता (Class) : 9th

तासिका (Period) : 2nd

वेळ (Time) : 30 min

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmosphere in class. ③ To correlate previous knowledge to present topic ④ To let the student know the important of the topic. ⑤ To develop scientific attitude.	Teacher asks some question based on previous knowledge ① What is acid ? ② What is base ? ③ What is the function of electron proton and neutron ? ④ What is Neutralize solution?	Students give expected answer. → An acid is any substance that in water solution taster sour, changes blue litmus paper to red. → A base is a substance that can neutralize the acid by reacting with hydrogen ions. → The proton forms the nucleus, while the electron orbits around it. → A chemical reaction where an acid and a base react with each other quantitatively
हेतूकथन : (Statement of Aim)	So, today we are going	to learn	about " Neutralization Reaction".	
विषय प्रतिपादन : (Presentation)	① Neutralization		Teache explains about Neutralization. A neutralization reaction can be defined as a chemical reaction in which an acid and base quantitatively react together to form a salt and water as products. In a neutralization reaction, there is a combination of H^+ ions and OH^- ions which form water.	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
		knowledge Student recog- nize and tells about neutralization.
	Neutralisation Reaction	
	acid + base (alkali) → salt + water  ACID + BASE → H⁺OH⁻ + SALT Fig - Neutralization Reaction Equation	
		knowledge - Student recog- nize and tells reaction and type of reaction is neutralization.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
A neutralisation reaction is generally an acid base neutralization reaction. Teacher ask some question. ① What is called neutrali- zation?	Students give answer. → Neutralization is a type of chemical reaction in which an acid reacts with a base to form salt and water.
Teacher explains about Neutralization reaction. The neutralisation reaction is best represented as Acid + Base → Salt + Water. When a strong acid reacts with a strong base the resultant salt is neither acidic nor basic in nature Examp when HCl (Hydroch- loric acid) a strong acid, reacts with NaOH, a strong base, the resulting salt is sodium chloride water $HCl + NaOH \rightarrow NaCl + H_2O$ When a strong acid reacts with weak base the resul- tant salt is acidic in nature. $3HNO_3 + Fe(OH)_3 \rightarrow Fe(NO_3)_3 + 3H_2O$.	Students listen carefully.
Teacher ask some question. ① How to neutralise NaOH with HCl? ② What type of reaction is neutralization?	Students give answer. → $HCl(aq) + NaOH(aq) \rightarrow NaCl(aq) + H_2O(l)$ + heat → A reaction between an acid and base is called a neutralizati and these can be considered to be a type of displacement reaction.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		① To strengthen acquired knowledge ② To revise the topic. ③ To recall the gain knowledge. ④ To test student knowledge. ⑤ To summerise the given topic.
गृहपाठ : (Home-Work)		① To develop the habit of self study. ② To develop writing skill and implementation of student. ③ To use leisure time at home.

फलक - लेखन (Black-Board Writing)

Date BLACK BOARD Class -
Subject - Chemistry Time -
Topic - Neutralization.

NEUTRALIZATION

$H_3O^+ + OH^- \longrightarrow 2H_2O$

Neutralization Reaction

Acid + base (akali) → Salt + klater

Acids and bases pH of the products varies.

Strength of Acid	Strength of base	Resultant pH
Strong	Strong	7
Strong	Weak	<7
Weak	Strong	>7
Weak	Weak	if $K_a > K_b$ = >PH <7 $K_a = K_b$ = 7PH =7

Home klork:- klhat is the PH value of Strong acid and base during neutralisation ?

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher summaries the topic and ask some question. ① klhat is Neutralisation given example? ② klhat is the neutrallization reaction used in daily life?	Students gives Answers → Example - klhen Sodium Hydroxide (NaOH), a base, reacts with Hydrochloric acid it forms the salt, Sodium chloride and water. → To treat wasp stings that are alkaline in nature, vinegar is used. To treat bee stings ant bites that are acidicin nature.
Teacher write Home work on black board. klhat is the pH value of strong acid and base during neutralisation?	Students Note down their Home work in Note Book

अभिप्राय (Remarks)

Class control was there
Concept was teach properly.
Good lesson.

Singhi

पर्यवेक्षकाची सही
(Sign. of Supervisor)

विषय (Subject) : Chemistry

पाठ क्रमांक (Lesson No.) :

विद्यालयाचे नांव : Nagar Parishad High School Samer.
(School Name)

विषयांश : Fossil fuel. Coal
(Topic)

पाठ साहित्य : Model duster, chalk, black board, Pointer, etc.
(Teaching Aids)

पूर्वज्ञान :
(Previous Knowledge)

उपविषयांश : ① Fossil
(Sub-Topic) ② Coal and carbonization Process

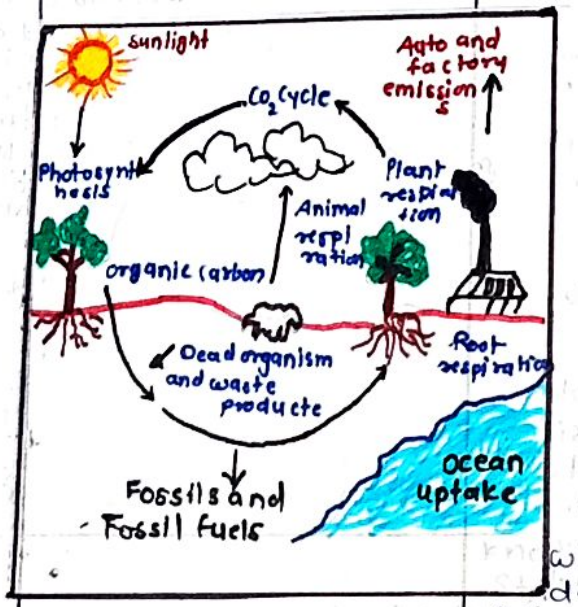
दिनांक (Date) :

इयत्ता (Class) : 8th

तासिका : 5th
(Period)

वेळ : 45 min
(Time)

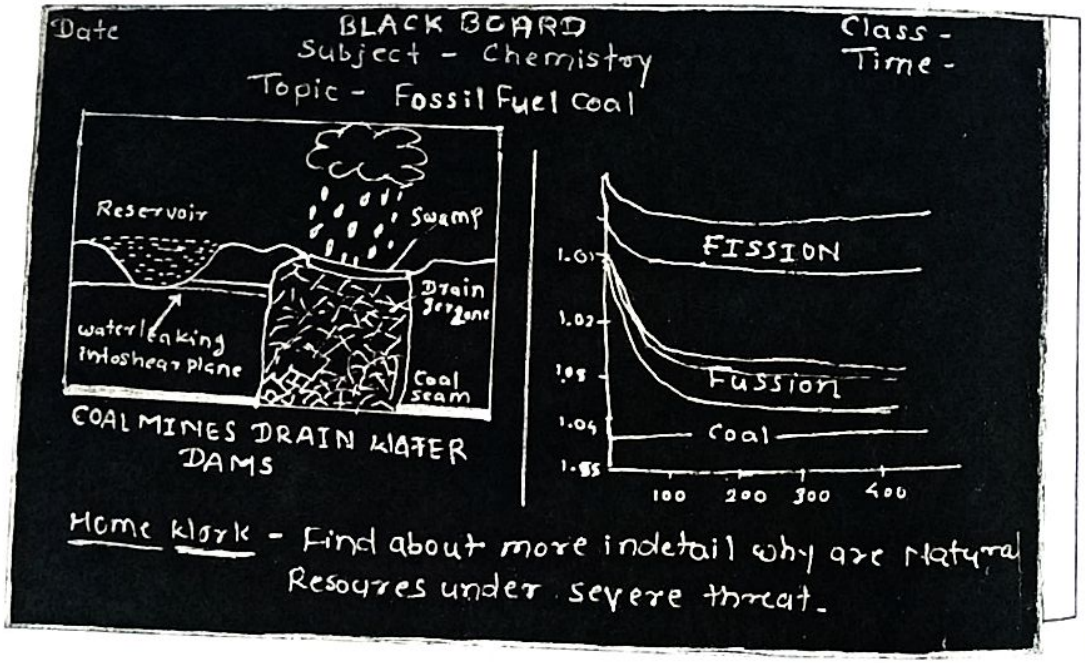
पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmosphere in class. ③ To correlate Previous knowledge to present topic. ④ To let the student know the importan t of the topic. ⑤ To develop Scientific attitude.	Teacher ask some question based on previous knowledge of the student. ① Resources like Air, Sunlight, water, minerals, Soil are called as ? ② What is meaning of Resource ? ③ How are Natural Resources classified ? ④ Resources like Plastic, resing Paints, fibres, explosives, drugs are called as ?	Students give expected answer. → Air, water, Sunlight, minerals are called as "Natural Resources" → Resource means anything in world available that exists in equillibrium and can be used by living organisms. → They are classified as, 1) Renewable Natural Resource. 2) Non-Renewable. → Plastic, Paints, fibre, explosive, drugs, etc are called Man-made Resources.
हेतूकथन : (Statement of Aim)	So, today we are going	to learn	about "A fossil fuel Coal."	
विषय प्रतिपादन : (Presentation)	Fossil		Teacher explains about Fossil :- Fossil are formed where dead animals and plants which died millions of years ago, were buried deep in earth and got covered with sediments like Sand, ston s, away from reacts of air. Due to high and external pressure inside earth converted into fossils Natural fuel formed from the remains of dead organisms buried deep inside earth long ago fossilized	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
		knowledge - Student recall meaning of Fossils. understanding Student tells the types of fossil fuel.
	Coal and carbonization. Process. 	wledge - dent reco - gnized and tells the def about coal understanding Student under- stand How is coal formed.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
due to external pressure and temperature are fossil fuels. They are three types ① coal ② Petroleum ③ Natural Gas.	
Teacher ask question. ① State meaning of word "Fossil"? ② What are types of fossil fuel?	Students give answer. → Fossils are sediments formed from remains of dead organisms deep inside earth. → Coal, Petrol, Diesel, Crude Natural Gas etc are types of Fossil fuel.
Teacher explains about coal and carbonization. Coal is hard, black, combustible mineral that consists mainly of carbon. Carbon is an element found in earths destroyed found heavily in all living organisms. The Slow process by which dead plants and organisms buried deep in earths crust converted into black rock sediment called coal. $C + O_2 \rightarrow Co_2 +$ Heat (4) energy. Coal is also used to make coke, coal Tair, coal gass. etc.	Students listen carefully
Teacher ask some questions ① Define Coal.	Students give answer. → Coal is a dark hard combustible mineral.
② What elements is coal made up of?	→ Carbon is present in coal.
③ How is coal formed by which process?	→ Carbonization is process for coal formation.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		① To strengthen acquired knowledge. ② To revise the topic ③ To recall the gain knowledge. ④ To test student knowledge. ⑤ To summerise the given topic.
गृहपाठ : (Home-Work)		① To develop the habit of self study. ② To develop writing skill and implementation of student. ③ To use leisure time at home.

फलक - लेखन (Black-Board Writing)



अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher summaries the topic and ask some question on it. ① What is real source of energy for coal? ② Where is coal found in India? ③ Approx how many year was coal formed?	Students give answer. → Solar energy is real source of energy for coal. → → 300 millions years ago coal was formed.
Teacher write Home-work on the black board. Find about more indetail why are Natural Resources under severe threat.	Students Note down their home work in note book.

अभिप्राय (Remarks)

Nice ~~Re~~presentation of topic
Good command on subject.
Teaching aid used properly.

Singh

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) :

विषय (Subject) :

विद्यालयाचे नांव (School Name) : Nagar Parishad High School Saoner.

विषयांश (Topic) : Petroleum oil

पाठ साहित्य (Teaching Aids) : Model, duster, chalk, black board, Pointer etc.

पूर्वज्ञान (Previous Knowledge) :

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmosphere in class. ③ To correlate previous knowledge to present topic. ④ To let the student know the important of the topic. ⑤ To develop scientific attitude.
हेतूकथन : (Statement of Aim)	So, today we are going to learn about "Petroleum oil"	
विषय प्रतिपादन : (Presentation)	Petroleum oil	

Chemistry

दिनांक (Date) :

उपविषयांश (Sub-Topic) ① Petroleum Oil

② Refining of Petroleum oil

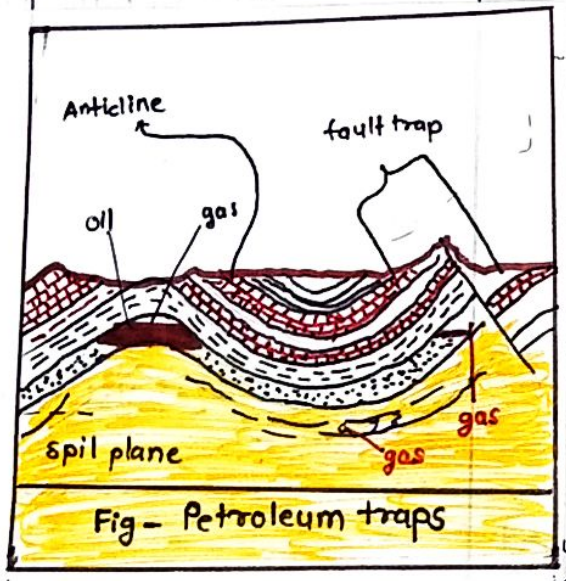
इयत्ता (Class) : 8th

तासिका (Period) : 2nd

वेळ (Time) : 80 min

अध्ययनानुभव (Learning Experience)

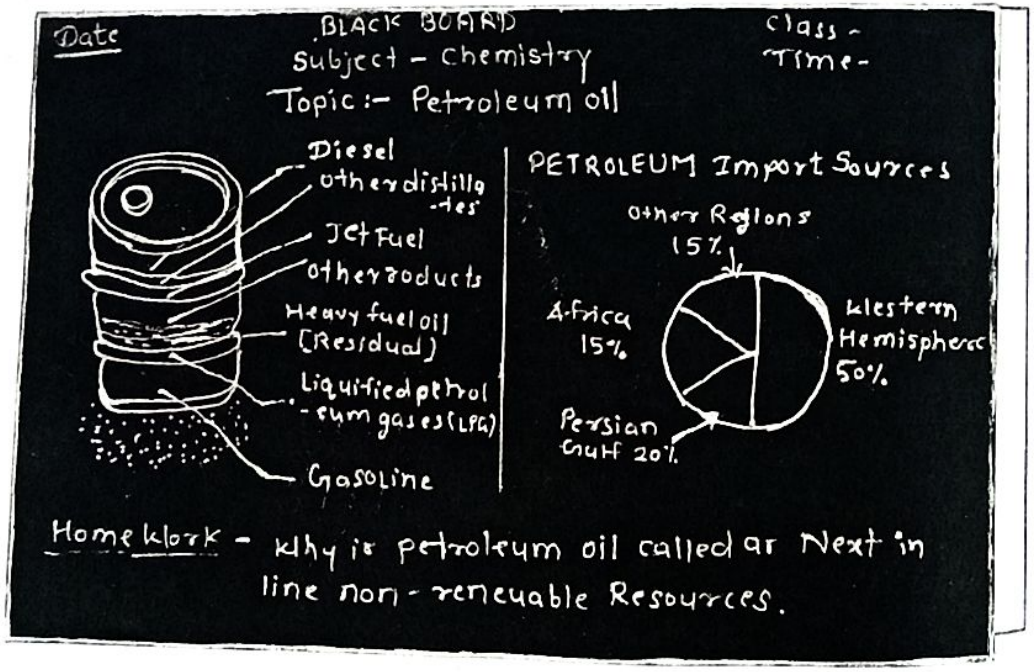
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher ask some question based on previous knowledge of the student. ① What is a liquid fuel used an light automobile?	Students give expected answer. → Petrol is used in Light and small automobile.
② What is a liquid fuel used in heavy automobile?	→ Desiel is used in heavy automobile.
③ Which gas is used in name to cook food?	→ Petroleum Gas or Li goss is used in home to cook food.
④ Name a liquid which is used in Stoves and Lantens?	→ kerosene is used in Stoves and Lantens.
Teacher explains about Petroleum oil. It is dark coloured, thick crude oil found deep below the ground in certain areas. It is a complex mixture of compounds known as hydrocarbons. Just like coal, Petroleum is also a fossil-fuel. Petroleum oil was formed by the decomposition of the remains of plants and animal buried under the sea millions years	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
		Understanding Student are able to explain proces of formation of petroleum oil in own words.
	Refining of Petroleum oil	
	 Fig- Petroleum traps	wledge.- ident recognize and tell s about Refining of Petroleum

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
ago Due to high pressure and temperature, action of bacteria, absense of air the dead remains slowly converted into petroleum. Teacher ask some question ① Petroleum is a non-renew able Resourse? ② What is petroleum in nature?	Students give answer. → Non-Renewable resources are once which once used up takes million time to form. And Petroleum oil is ~~our~~ such resourse which is limited in orgin. → Petroleum is a hydrocarbon it is dark coloured and density is less then water.
Teacher explains about Refining of Petroleum oil. The process of separating crude petroleum oil into more useful fractions is called Refining. The refining of petroleum into different product is based on fact that different products have different boiling points. Refining is carried out in oil Refinary. and various products obtained Petrol - LPG - Diesel. kerosene - lubricating oil. Teacher ask some question. ① Where is petroleum Refining carried out? ② Give example of various Peteroleum components?	Students listen carefully. Students give answer. → In oil Refining with fractional Distillation. → Petrol, Diesel, kerosene, LPG are various components of liquide oil.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		① To strength acquired knowledge ② To revise the topic. ③ To recall the gain knowledge. ④ To test student knowledge. ⑤ To summerise the given topic.
गृहपाठ : (Home-Work)		① To develop the habit of self study ② To develop writing skill and implementation of Student. ③ To use leisure time at home

फलक - लेखन (Black-Board Writing)



अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher Summaries the topic and ask some question on it. ① What is Petroleum Refining? ② How is Petroleum oil formed in nature?	Students give answer. → The process by which petroleum oil is seperated into various components. → Petroleum oil is formes due to extreme conditions being subjected on dead buried Plants and animals deep in Earth.
Teacher write Home-work on the black board. ① Why is Petroleum oil called as Next in line Non-renewable Resources.	Students Note down their home work in Note Book.

अभिप्राय (Remarks)

lesson was so Good.

Good Question answer skill

nice lesson.

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : _____ विषय (Subject) : Chemistry

विद्यालयाचे नांव : Nagar Parishad High School, Samer. (School Name)

विषयांश : Natural gas (Topic)

पाठ साहित्य : Model, duster, chalk, black board, pointer etc. (Teaching Aids)

पूर्वज्ञान : (Previous Knowledge)

उपविषयांश : ① Natural gas ② Type of Natural gas (Sub-Topic)

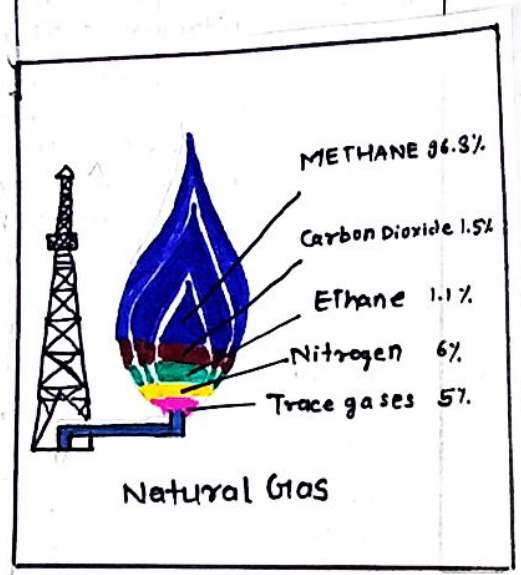
दिनांक (Date) : _____

इयत्ता (Class) : 8th

तासिका : 2nd (Period)

वेळ : 30min (Time)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge ② To create an atmosphere in class. ③ To correlate previous knowledge to present topic. ④ To let the student know the important of the topic. ⑤ To develop scientific attitude	Teacher ask some question based on previous knowledge of the student. ① What is gas ? ② Give example of gas ? ③ What is an example of a gas at home?	Students give expected answer. → Matters which have indefinite shape and volume are called gases. → Example - air, oxygen, hydrogen nitrogen, carbon-dioxide etc. → Gas used in homes is either propane, butane or a mixture of the two. the other type of gas used in homes is natural gas or CNG, both of which are methane.
हेतूकथन : (Statement of Aim)	So today we are going to learn		about " Natural gas"	
विषय प्रतिपादन : (Presentation)	① Natural gas		Teacher explains about Natural gas Natural gas is a fossil fuel It consist of mainly methane with small quantities of ethens and propane. Methane is usually in amount. Occurance - Natural gas is found deep in earth's crust either above or along with oil above petrolum deposits Thus, some wells dug into earth	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
		knowledge - Student recognize and tells about Natural gas.
	② Type of Natural Gas. 	Understanding - Student are able to explain How natural gas is produced and uses of natural gas.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
and Natural gas. It is formed above decomposition of vegetables matter lying under water.	
Teacher ask some question ① What is Natural gas? ② What is Natural gas made upof?	Students give answer. → It is a fossil fuel found deep in earth's crust. → 95% methane and 5% propane ethane makes Natural gas.
Teacher explains about Types of Natural Gas. Natural gas that is economical to extract and easily accessible is considered, "conventional" conventional gas is trapped in permeable material beneath impermeable rock. Natural gas found in other geological setting is not always so easy or practical to extract. This gas is called "unconventional". New technologies and processes are always being develop to make this unconventional gas more accessible and economically viable.	Students listen carefully.
Teacher ask some question ① How natural gas is produced? ② What are the 3 biggest uses of natural gas?	Students give answer. → Natural gas is extracted from subsurface rock formations via drilling. → There are 3 uses of natural gas which are much more significant than the other: Heating Electricity generation Industrial use.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		① To strengthen acquired knowledge ② To revise the topic. ③ To recall the gain knowledge. ④ To test Student knowledge. ⑤ To summerise the given topic.
गृहपाठ : (Home-Work)		① To develop the habit of self-study. ② To develop writing skill and imple- mentation of Student. ③ To use leisure time at home.

फलक - लेखन (Black-Board Writing)

Date

BLACK BOARD

Subject - Chemistry

Topic - Natural Gas

Class -

Time -

Properties of Natural Gas

- Equations and properties use in course.
- Real gas law, z-factor, density and FVF.
- corresponding states
- Viscosity of natural gas
- Heat capacity and heat capacity ratio.

Natural gas is 96%

Methane gas - CH_4

Also contains small percentage of:

Ethane 2.1 %

Propane <1%

Butane <1%

Pentane <1%

Hexane <1%

Heptane <1%

Home work :- ① Where is natural gas found?

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher summaries the topic and ask some question on it ① Why is it called natural gas ? ② What is natural gas examples ?	Students give answer. → A naturally occuring flammable gas that can be used as a fuel or source of energy for a wide range of purpose like cooking heating, transportation, and power generation. → Natural gas examples are Methane, ethane, butane and Propane.
Teacher write Homework on the Black board. ① Where is natural gas found ?	Students Note down their home work in Note book.

अभिप्राय (Remarks)

Presentation was good.

Introduction was proper.

Body language was good.

Rajguru

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : _____ विषय (Subject) : Chemistry

विद्यालयाचे नांव : Nagar Parishad High School Saoner. (School Name)

विषयांश : Chemical bonding (Topic)

पाठ साहित्य : Model, duster, chalk, black board, pointer, etc. (Teaching Aids)

पूर्वज्ञान : (Previous Knowledge)

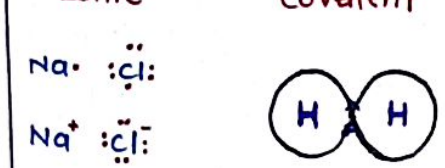
उपविषयांश : ① Chemical bonding (Sub-Topic)

दिनांक (Date) : _____

इयत्ता (Class) : 8th

तासिका : 2nd (Period) वेळ : 45 min (Time)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge ② To create an atmosphere in class. ③ To correlate Previous knowledge to present topic. ④ To let the Student know the important of the topic. ⑤ To develop scientific attitude.	Teacher ask some question based on previous knowledge of the student. ① What is bond? ② Bond can be form by? ③ When the bond can be form ? ④ Atoms Shows the presence of ?	Students give expected answer. → Bond between any two things are interconnected with each other. → Bond can be form by sharing of electron bet^n two atom. → When the valance electrons are present in an atom the bond can be form. → Show the ~~presence~~ presence of proton, neutron & electron.
हेतूकथन : (Statement of Aim)	So today we are going	to learn	about " Chemical bonding".	
विषय प्रतिपादन : (Presentation)	chemical bonding.		Teacher explains about chemical bonding & Chemical bond formed between atoms of non-metal. They do not form ions when bonding Happens with valance electrons only. Properties. ① Exists as solid, liquid and gasous.	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	Chemical Bonding Ionic Covalent  	Understand - student give the example of Ionic bond and tell knowledge - Student recognize and tell about chemical bond.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
② Bad conductor & insulable in polar solvent. ③ Loco melting & boiling point. ④ Create ions an charged particles.. chemical bond is of two type - Ionic bond & covelent bond. It is force of attraction or bond formed due to transfer of electron. It shows cation & anion. Cation is chemical speies that carries positive charge. Ex Na^+, Al^{3+}, K^{2+}, Mg^{2+} Anion is chemical species that carries -ve charge eg Cl^-, Br^- Teacher ask some question. ① Give an example of Ionic bond ② Give one choos acter of chemical bond. ③ Chemical bond can be form in which states?	Students listen carefully. Students give answer → Nacl is the example of Ionic bond [Nacl → Na^+ & Cl^-] → Chemical bond is bad conductor & insulable in polar solvents. → It can be form in solid, liquid & gases state.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		① To strengthen acquired knowledge. ② To revise the topic. ③ To recall the gain knowledge. ④ To test student knowledge. ⑤ To summerise the given topic.
गृहपाठ : (Home-Work)		① To develop the habit of self study. ② To develop writing skill and implementation of student. ③ To use leisure time at home.

फलक - लेखन (Black-Board Writing)

Date

BLACK BOARD

Class -

Time -

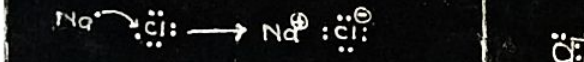
Subject-Chemistry

Topic - Chemical bonding

Type of Chemical Bonds

① Ionic Bond

Metal atom loses electron (s) to nonmetal atom



Sodium chlorine — Sodium Chloride.

② Covalent Bond

Two nonmetal atoms share electron.

oxygen atoms — oxygen molecule

Home Work :- Collect & write information about chemical bond formation, types and its example.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher summaries the topic and ask some question on it. ① khatara covalent bond ? ② Physical properti of covalent bond is ?	Students give answer. → A covelent bond consists of mutual sharing of one or more pair of electrons between two atoms. → ~~Sodium~~ It have generally low melting & boiling point.
Teacher write Home-work on the black board. ① collect & write information about chemical bond formation, types & example.	Students Note down their home work in Note Book.

अभिप्राय (Remarks)

Student's response was proper.

Explenation was good

lesson wa good

Bingui

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 3 विषय (Subject) : Chemistry

विद्यालयाचे नांव : Nagar Parishad High School Saoner. (School Name)

विषयांश : Chemical Reaction. (Topic)

पाठ साहित्य : Model, duster, chalk, black board, Pointer etc. (Teaching Aids)

पूर्वज्ञान : Student (Previous Knowledge)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmosphere in class. ③ To correlate previous knowledge to present topic. ④ To let the Student know the imp. ortant of the topic. ⑤ To develop scientific attitude.
हेतूकथन : (Statement of Aim)	So today we are going	to learn
विषय प्रतिपादन : (Presentation)	① Chemical Reaction. Type of chemical Reactions. a) Combition Reaction	

Chemistry

उपविषयांश (Sub-Topic) : ① Chemical Reaction ② Type of Reaction

दिनांक (Date) :

इयत्ता (Class) : 8 th

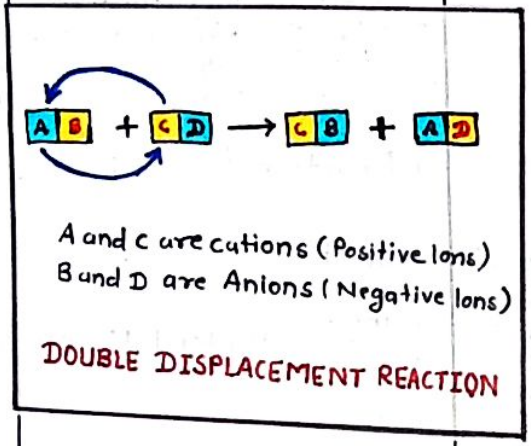
knowledge about valency and balancing the chemical

तासिका (Period) : 2nd

वेळ (Time) : 40 min

अध्ययननुभव (Learning Experience)

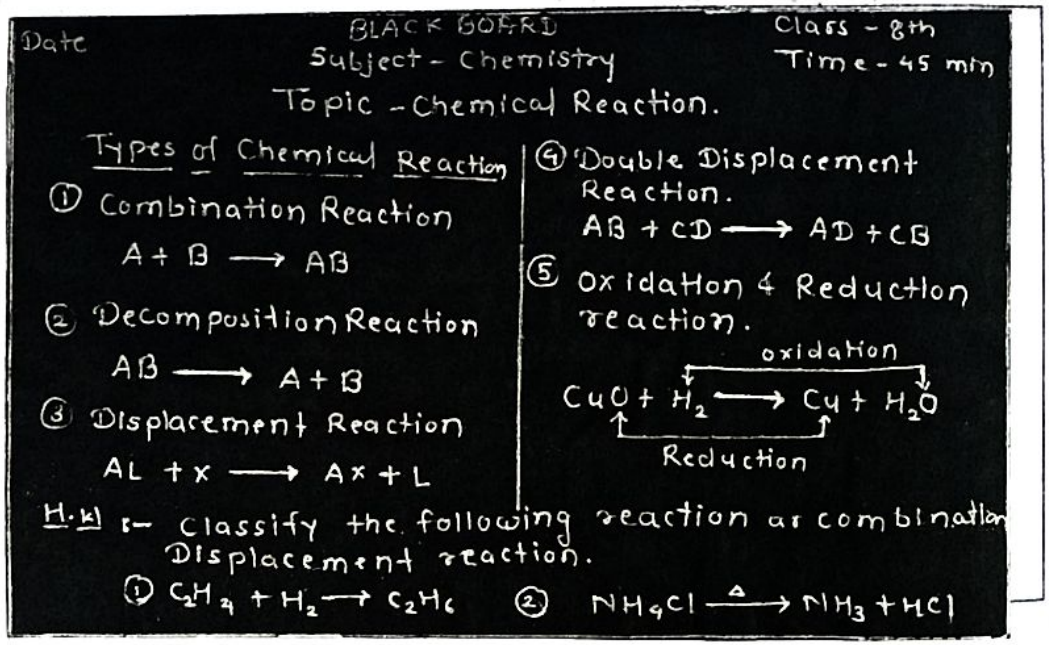
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher ask some question based on previous knowledge of the student. ① What is the symbol of magnesium, oxygen and carbon? ② Write the valency of magnesium, oxygen and carbon. ③ What do you mean by Reactant and product?	Students give expected answer. → Symbole of magnesium, oxygen and carbon are Mg, O, C respectively. → Valency of magnesium, oxygen and carbon are 2, 2, 4 respectively → The Substance which take part in a chemical reaction are called reactent and the Substances formed due to the chemical reaction are called Product.
about " Chemical Reaction "	
Teacher explains about Chemical Reaction. Chemical Reaction is the process which transferme one or more substance into new substance with new properties. Type of Chemical Reaction ① Combination Reaction - The reaction in which two or more substance combine to form a single substance under suitable condition are called combination	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	b) Decomposition Reaction	Knowledge - Student recognize and tells about chemical Reaction: Understanding - Student clear the reaction of combition and decomposition
	c) Displacement & Double Displacement Reaction.  A and C are cations (Positive Ions) B and D are Anions (Negative Ions) DOUBLE DISPLACEMENT REACTION	Knowledge-Student recognize about chemical Reaction. Understanding- Student clear the reaction of displacement and Double displacement reaction.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
② Decomposition Reaction The reaction in which a single substance decomposes into two or more simple substance under suitable condition are called decomposition Reaction. Teacher ask some question ① Can You give an example of combition Reaction? ② can You give an example of Decomposition Reaction?	Students give answer. → Example of combition Reaction. is $Mg + O_2 \rightarrow 2MgO$ → Example of decomposition Reaction is $2KClO_3 \rightarrow 2KCl + 3O_2$
Teacher explain about Type of chemical reaction. Displacement Reaction:- The chemical Reaction in which one element of a reactant takes the place of another element present in another reactant is called displacment Reaction Double Displacement Reaction:- A chemical reaction in which one component each of both the reacting molecule get exchanged to form new product is called double displacement reaction. Teacher ask some question ① Give example of Displacement reaction? ② Give example of Double displacement reaction?	Students listen carefully. Students give answer. → Example of Displacement Reaction $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$. → Example of Double displacement Reaction $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		① To Strengthen acquired knowledge ② To revise the topic. ③ To recall the gain knowledge. ④ To test student knowledge. ⑤ To summerise the given topic.
गृहपाठ : (Home-Work)		① To develop the habit of self study. ② To develop writing skill and implementation of student. ③ To use leisure time at home

फलक - लेखन (Black-Board Writing)



अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher summaries the topic and ask question on it. ① What is chemical Reaction? ② Give the Reaction of combition.	Students give answer. → A process in which one or more substances, also called reactants, are converted to one or more different substances known as products. → Combition Reaction Example. $2SO_2 + O_2 \longrightarrow 2SO_3$
Teacher write Home-work on the black board. classify the following reaction as combination, Displacement or Decomposition Reaction. ① $C_2H_4 + H_2 \longrightarrow C_2H_6$ $NH_4Cl \xrightarrow{\Delta} NH_3 + HCl$	Students Note down their home work in Note book.

अभिप्राय (Remarks)

lesson was good.
objectives were gained.

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 4 विषय (Subject) : Chemistry

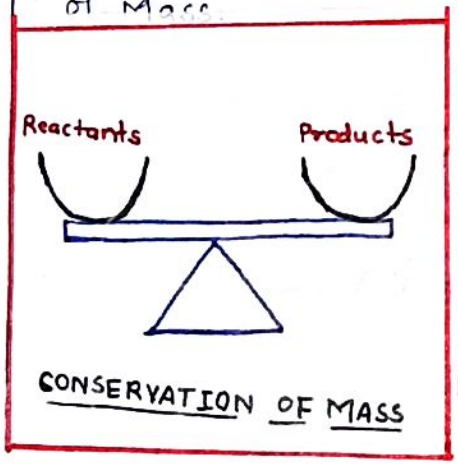
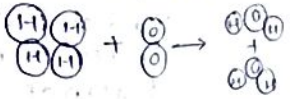
विद्यालयाचे नांव (School Name) : Nagar Parishad High School Samer. विषयांश (Topic) : Language of chemistry

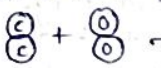
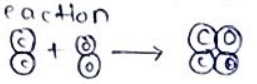
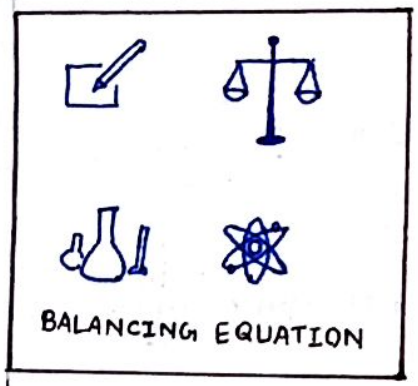
पाठ साहित्य (Teaching Aids) : Periodic table, black board, chalk etc. पूर्वज्ञान (Previous Knowledge) : Students

दिनांक (Date) :

उपविषयांश (Sub-Topic) : ① Balancing a chemical equation. इयत्ता (Class) : 8th.

know how to write the chemical formula. तासिका (Period) : 3rd वेळ (Time) : 30 min.

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		① To arise previous knowledge. ② To create an atmosphere in class. ③ To correlate previous knowledge to present topic. ④ To let the student know the important of the topic. ⑤ To develop scientific attitude.	Teacher ask some questions based on previous knowledge of the student. ① What are the symbole of copper, Oxygen & calcium? ② Can you tell me the valency of copper & oxygen? ③ Can you all find the formula of copper oxide?	Students give expected answer. → Symbole of copper, Oxygen & calcium are Cu, O, Ca. → Valency of copper & oxygen are +2 and −2 respectively. → Formula of copper oxide is Cu_2O.
हेतूकथन : (Statement of Aim)	So today we are going	to learn	about " Language of chemistry".	
विषय प्रतिपादन : (Presentation)	① Law of conservation of Mass 		Teacher explains about Law of conservation of Mass :- Mass can be neither be created nor destroyed. In a chemical reaction the total mass of the product is always equal to the sum of masses of all the reactants. Exa. 	Students listen carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
		Knowledge - Student recognize and tells Mass can neither be created nor destroyed. Understanding - student clear the Reaction.	Teacher ask some question ① What can neither be created nor destroyed? ② children you all solve this 	Students give answer. → Mass can neither be creakd nor destroyed. → Reaction 
	② Step for balancing the equation. 	Knowledge - Student recognize and tells about How to balance equation. Understanding - Student clearly understand. Balance Reaction.	Teacher explain about Step for balancing the equation We start by balancing Fe, Since it has a high molecular mass atom and only appeare once on the reactent & the product side. we see that there are three Fe atoms on the product side. so we can balance fe by adding a coefficient '3' to Fe on the reactant side. Having balanced Fe, we can then turn to Oxygen since it Occure with Fe in Fe_3O_4. and we have already balanced Fe. There are four atom of oxygen on the product side so. we can balance oxygen by placing coefficient of '4' in from of H_2O on the reactant Side. Teacher ask some que. ① Equation will be $3Fe + H_2O \longrightarrow$ ② $3Fe + 4H_2O \longrightarrow$	Students listen carefully Students give answer. → $3Fe + H_2O \longrightarrow 1Fe_3O_4 + H_2$ $3Fe + 4H_2O \longrightarrow 1Fe_3O_4 + H_2$

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		① To strengthen acquired knowledge ② To revise the topic ③ To recall the gain knowledge. ④ To test student knowledge. ⑤ To summerise the given topic.
गृहपाठ : (Home-Work)		① To develop the habit of self study ② To develop writing skill and implemen ntation of student. ③ To use leisure time at home.

फलक - लेखन (Black-Board Writing)

Date

BLACK BOARD

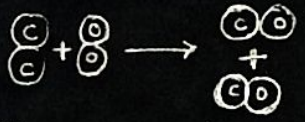
Class - 8th

Subject - Chemistry

Time - 45 min

Topic - Language of chemistry

* Law of Conservation of Mass.



Steps :-

$Fe + H_2O \longrightarrow Fe_3O_4 + H_2$

Adding 3 to Fe in the left side.

$3Fe + H_2O \longrightarrow Fe_3O_4 + H_2$

Adding 4 to H_2O in reactant

Adding 4 to oxygen on the product side.

$3Fe + 4H_2O \longrightarrow Fe_3O_4 + H_2$

Adding 8 hydrogen on right side in product.

$3Fe + 4H_2O \longrightarrow Fe_3O_4 + 4H_2$

Home Work :- ① What is a balanced chemical equation?

② Balancing the following equation.

$Zn + NaOH \longrightarrow Na_2ZnO_3 + H_2$

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher summaries the topic and ask some question on it. ① Why should chemical equation be balanced? ② What is the balanced equation for Co_2, h_2O and $C_6H_{12}O_6\ O_2$?	Students give answer. → The law of conversation of mass states that the mass can neither be created nor be destroyed. → The balance chemical equation is $6CO_2 + 6H_2O \longrightarrow C_6H_{12}O_6 + 6O_2$
Teacher write Home work on the Black Board. ① What is a balanced chemical equation? Balancing the following equation. $Zn + NaOH \longrightarrow Na_2ZnO_3 + H_2$	Students Notedown their Home work e in Note Book.

अभिप्राय (Remarks)

Lesson was good.

Evaluate students properly.

recapitulation was proper

Bingi

पर्यवेक्षकाची सही

(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : _____ विषय (Subject) : Chemistry

विद्यालयाचे नांव : Nagar Parishad High school Samer
(School Name)

विषयांश : Atom
(Topic)

पाठ साहित्य :
(Teaching Aids)

पूर्वज्ञान :
(Previous Knowledge)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
प्रस्तावना : (Introduction)		① To arise pervious knowledge. ② To create an atmosphere in Class. ③ To correlate previous knowledge to present topic ④ To let the student know the important of the topic ⑤ To develop scientific attitude.
हेतूकथन : (Statement of Aim)	So today we are going to learn about " Atom and Molecule."	
विषय प्रतिपादन : (Presentation)		

संविधान तक्ता (Blue Print)

उपघटक (Sub Unit)	उद्दिष्टे (Objectives)									एकुण गुण (Total Marks)
	ज्ञान (Knowledge)			आकलन (Understanding)			उपयोजन (Application)			
	वस्तुनिष्ठ (Objective Type)	लघुत्तरी (Short Type)	दिर्घोत्तरी (Essay Type)	वस्तुनिष्ठ (Objective Type)	लघुत्तरी (Short Type)	दिर्घोत्तरी (Essay Type)	वस्तुनिष्ठ (Objective Type)	लघुत्तरी (Short Type)	दिर्घोत्तरी (Essay Type)	
Atom	1(2)				1(2)				4(1)	8
subatomic Particle	1(2)				2(2)					6
Molecule	1(3)				2(2)				4(1)	11
एकुण गुण (Total Marks)	7				10				8	25

Sr No	Subunit	Marks	%
①	Atom	8	32%
②	Subatom	6	24%
③	Molecule	11	44%
	Total Mark	25	100%

Sr No	Objective	Marks	%
①	knowledge	7	28%
②	understanding	10	40%
③	Application	8	32%
	Total Mark	25	100%

Sr No	Type of Que.	Marks	%
①	Objective typ / Tike	7	28%
②	Short Ans.	10	40%
③	Essaye type	8	32%
	Total Mark	25	100%

घटक चाचणी संविधान तक्ता
(Unit Test with Blue Print)

Time - 35 min Subject - Chemistry Total Mark - 25.

Topic - Atoms and Molecule

Que 1) Fill in the blanks - [4 Marks]

① Electron possess ----- charge.

② ----- and ----- are found in the center of an atom.

③ Mass of Proton is -----.

④ Atom have some number of ---- and -----.

Que 2) Tick the correct Answer. [3 Marks]

① What is the charge of proton?
a) Positive b) Negative
c) Both d) Neutral

② Ozone is a ------ molecule.
a) Diatomic b) Triatomic
c) Monatomic d) None of these

③ Which is the example of molecular Compaind.
a) O_2 b) Cl_2
c) H_2O d) O_3

Que 3) Give the correct answer of the Question in 30 Words. [10 Marks]

① What do you mean by atom?

② What are sub-atomic particle?

③ Who discovered neutron?

④ What is molecule?

⑤ How molecule of compound is different from molecule?

Que 4) Give the correct answer of the Question in 100 words. [8 Marks]

① Describe sub-atomic particle?

② Define Molecule and Molecule of compound with example?

के. डी. पवार शिक्षण महाविद्यालय
सावनेर, जि. नागपूर

K. D. PAWAR SHIKSHAN MAHAVIDYALAYA, SAONER

शैक्षणिक सत्र 2021 – 2023
(Session)

सराव पाठ नियोजन पुस्तिका

(Practice Teaching Planning Book)

छात्र अध्यापकाचे नांव :
(Student-Teacher's Name) PALAK CHAUHAN

क्रमांक :
(Roll No.)

अध्यापन पध्दती :
(Methods)

१) BIOLOGY

२) CHEMISTRY

अ नु क्र म णि का (Index)

क्रमांक (Sr.No.)	दिनांक (Date)	शाळा (School)	वर्ग (Class)	विषय (Subject)	पर्यवेक्षकाची सही (Sign. of Supervisor)
1.	14/09/22	water pollution.	9th	Biology	V. Good completed Bingu
2.	20/09/22	Nutrients in food	9th	Biology	
3.	29/09/22	Types of joint	8th	Biology.	
4.	7/10/22	Types of habitats	8th	Biology	
5.	14/10/22	classification of animals.	8th	Biology	
6.	20/10/22	Types of teeth	8th	Biology.	
7.	28/10/22	Steps of digestion	8th	Biology	
8.	2/11/22	Mode of Nutrition in plants	8th	Biology.	
9.	10/11/22	Blood	9th	Biology	
10.	18/11/22	Digestion in Amoeba	8th	Biology	
11.	25/11/22	Different sources of water.	9th	Biology.	
12.	30/11/22	Parts of Plant	8th	Biology	
13.	6/11/22	Breathing	10th	Biology.	
14.	14/12/22	How do we breath?	10th	Biology	

अ नु क्र म णि का (Index)

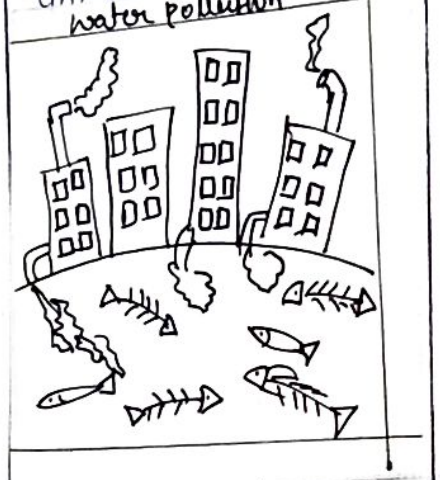
क्रमांक (Sr.No.)	दिनांक (Date)	शाळा (School)	वर्ग (Class)	विषय (Subject)	पर्यवेक्षकाची सही (Sign. of Supervisor)
15.	20/12/22	Classification of plants.	9th	Biology	Bingu
16.	27/12/22	Types of fibers.	8th	Biology.	
17.	04/01/23	Friendly micro-organisms	8th	Biology.	
18.	09/01/23	Harmful micro-organisms	8th	Biology.	
19.	13/01/23	Human excretory system.	8th	Biology	
20.	14/01/23	Aerobic and Anaerobic respiration	10th	Biology.	

पाठ क्रमांक (Lesson No.) : 01 | विषय (Subject) : Biology | दिनांक (Date) : 14/09/22

विद्यालयाचे नांव (School Name) : Sunflower | विषयांश (Topic) : Natural Resources | उपविषयांश (Sub-Topic) : water pollution | इयत्ता (Class) : 9th

पाठ साहित्य (Teaching Aids) : chart paper, paper article | पूर्वज्ञान (Previous Knowledge) : student recognise & tell about water pollution | तासिका (Period) : 4th | वेळ (Time) : 11:30 am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ To arise previous knowledge. → Attractive beginning. → To developing Scientific attitude. → To link previous knowledge to present knowledge.	Teacher ask questions on previous knowledge :- Q1) what are the basic needs of humans? Q2) How we get water? Q3) which water is not suitable for drinking? Q4) How water gets polluted? Q5) which type of pollution it causes?	Students give expected answers :- Basic needs of humans are air, water, food, shelter etc. we get water from rain, lakes, ponds etc. Polluted water is not suitable for drinking. Due to peoples activity. It will cause ~~Air~~ water pollution.
हेतूकथन : (Statement of Aim)	So, today we are going to learn	about, " water pollution".		
विषय प्रतिपादन : (Presentation)			Teacher explains about the topic by showing a model :- → whenever harmful substance such as garbage toxic chemicals mixed with water, water becomes polluted.	Students listening carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	GANGA PROJECT water pollution  water pollution Water pollution → organic pollutants, → micro-organism, → Nutrient, → suspended solids and sediments, → Inorgani pollution, → Thermal pollution, → Radioactive pollution	Knowledge Student recall and give answer. Understanding Student explain How water affect	A study by the world wide fund for nature (WWF) found that Ganga is one of the 10 most endangered rivers in the world. An ambitious plan to save the river called - 'the Ganga Action plan' was launched in 1985. It aimed to reduce the pollution level of river. There are some ways for purifying water:- ~~(1)~~ ~~How~~ (1) Many households use boiling as a method for obtaining safe, drinking, water. Boiling kills the germs present in water. (2) Chlorination is a commonly used chemical method for purifying water. Teacher ask question on topic:- (Q1) What make water polluted? (Q2) How does water get polluted? (Q3) Does polluted water affect living beings?	contamination in water makes water polluted. Many industries release harmful chemicals into river. People wash clothes & throw garbage into the river. Yes it affect both animals and

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
पुनरावलोकन : (Recapitulation)		→ To fix the gain knowledge → summing up the taught topic → Recalling what is taught → To evaluate the shudents.	In oorder to revise topic teacher ask some questions:- 1) what are the different ways in which water gets contaminated? 2) At an individual level, how can you help reduce water pollution?	water get contaminated by washing clothe & utensils in River. By throwing garbage in river. ① Laws should be strictly implemented ② We should save water at our level.
गृहपाठ : (Home-Work)		→To develop self-shidi. habbit. →To use the leisure time. →To fix the gain knowledge.	Teacher gives homework on taught topic. Due) Make a list of measures that would help your town to ensure the supply of clean water.	Shudents writing down the homework.

फलक - लेखन (Black-Board Writing)

SUB - Biology
Class: 9th

Date: 14/09/22

Water Pollution

Water pollution is the contamination of water bodies e.g. = lakes, rivers, oceans.

*Water pollution Caused by:

→ Marine Dumping
→ Industrial waste
→ mainly from households
→ Nuclear waste
→ Oil pollution
→ Underground storage leaks.

*Water pollution Effects:

Diseases like Cholera, Malaria, Typhoid.

Aquatic life gets destroyed due to water pollution

H.W = Make a list of measures that would help your town to ensure the supply of clean water.

अभिप्राय (Remarks)

lesson was taken

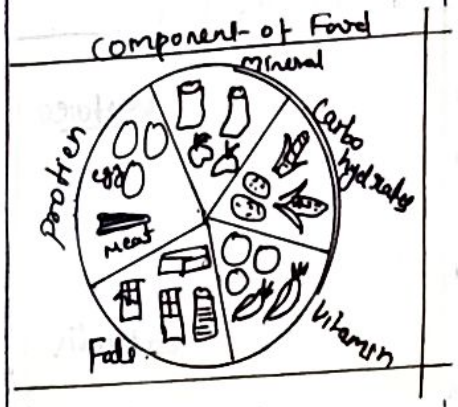
पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 02 | विषय (Subject) : Biology. | दिनांक (Date) : 20/09/22

विद्यालयाचे नांव : Sunflower school (School Name) | विषयांश (Topic) : Importance of food essen. | उपविषयांश (Sub-Topic) : ~~Natural~~ Nutrients in food. | इयत्ता (Class) : 9th

पाठ साहित्य : Chart paper, (Teaching Aids) | पूर्वज्ञान : (Previous Knowledge) Student recognise about the topic | तासिका (Period) : 4th | वेळ (Time) : 11:80am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ To arise previous knowledge. → To Developing Scientific attitude. → To link previous knowledge to present knowledge → To motivate the students.	Teacher ask questions on previous knowledge; Q1) What is important for us to live? Q2) How do we get food? Q3) Why food is important for us? Q4) What is essential for our growth? Q5) Does all the nutrients are nessesary for our body?	Students give expected answers; Food, Air, water are important to live. We get food from plants and animals. Food is important to get energy and growth. Nutrients are essential for our growth. Yes all the nutrients are very necessary for our body.
हेतूकथन : (Statement of Aim)	So, today we are going to learn	about "Nutrients in Food".		
विषय प्रतिपादन : (Presentation)	Nutrients		Teacher explains the topic by showing chart paper. We know that each and every food item are made up of different ingredient. Componends that are needed by our body are called 'Nutrients' Examples: Fat, vitamin, protein carbohydrate, mineral.	Students listening carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	Carbohydrate Fats  Minerals	Knowledge: Student recall what is Nutrition Understanding: Student describe the energy giving food.	① Carbohydrate :- provide energy to our body. ② Fats : provide energy to our body. So, carbohydrate and fat are called "Energy giving food". Ex: wheat, maize, sweet potatoes. ③ Proteins :- required for growth and repair of our body. so, they are called "body building food". Ex: meat, eggs, fish. ④ Vitamins : they are called protective food. Ex: fruits and vegetables. ⑤ Minerals :- they maintain our health. Teacher ask some Questions :- Q1) which type of food is good for us? Q2) what is nutritents? Q3) what are energy giving food? Q4) Give examples of body-building food?	Nutrition which food is good for us. a substance that is needed to keep a living thing alive and help to grow. Carbohydrate and fat are energy giving food. eggs and milk are body-building food.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		→ To fix the gain knowledge → summing up the taugh topic → Recalling what is taugh → To evaluate the students
गृहपाठ : (Home-Work)		→ To fix the gain knowledge → To develop creativity → To use the lesson in → To develop self-study attitude

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
In order to recall, Teacher ask some question on what is taught: Q1) What are nutrients? Q2) What is the function of Vitamins. Q3) Give some examples of Vitamins Teacher give homework on taught topic (Q1) Make a list of food we eat daily and mention the nutrient present in it.	students answer the questions: components that are needed by our body to keep healthy. To protect our body. Vitamin A, Vitamin B, Vitamin C, Vitamin D, E, K & B complex. student writing down the homework

फलक - लेखन (Black-Board Writing)

Sub- Biology
class - 9th
Date = 20/09/22

Nutrients in food

① Carbohydrate rich food :-
→ Rice, potatoes, Bread, Pasta.

② Source of Fats :-
→ Butter, Nuts, Avacadoes.

③ Proteins :-
→ Egg, Meat, Dairy, Seafood.

④ Vitamins :-
fruits, vegetables, Greens, wheat, soyabean

⑤ Minerals :-
→ Red Meat, Milk, Seafood.

H.W ⇒ Make a list of food we eat and mention the nutrients present in it.

अभिप्राय (Remarks)

lesson was good

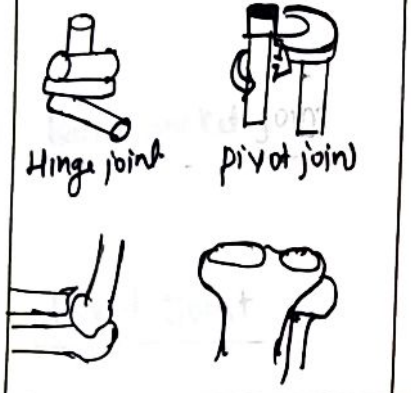
पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.): 03 | विषय (Subject): Biology | दिनांक (Date): 29/09/22

विद्यालयाचे नांव (School Name): Sunflower school | विषयांश (Topic): Body movement | उपविषयांश (Sub-Topic): Types of joint | इयत्ता (Class): 8th

पाठ साहित्य (Teaching Aids): Chart paper, 3D Model | पूर्वज्ञान (Previous Knowledge): Students know about types of joints | तासिका (Period): 2nd | वेळ (Time): 8:30 am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ To arouse previous knowledge → Attractive beginning → To develop scientific attitude. → To link previous knowledge to present knowledge. → To motivate students.	Teacher ask questions on previous knowledge: Q1) when you run which part of the body move fast? Q2) When you write which part of the body moves? Q3) why our stomach does not show any movement?	Students give expected answer Feet is the part of body which make move fast. Hands moves when we write. because their are no joints in stomach.
हेतूकथन : (Statement of Aim)	So, today we are going to learn about "Types of Joints".			
विषय प्रतिपादन : (Presentation)	Bones		Teacher write defination on the blackboard and explain about bones and joints. Bones : Bones are the rigid organs that constitute an important part of endoskeleton of vertebrate. They support and protect the various organs of the body.	Students listening carefully

पाठाच्या पायऱ्या (ipets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	Joints HINGE JOINT Pivot joint Gliding joint Types of Joint  Hinge joint pivot joint	Knowledge Students recall about joint. Understanding Shelew explain ball & socket	Joints :- joint is a connection made between bones. There are 5 types of joints : 1) HINGE JOINT :- in hinge joint, articular surface are molded to each other as to permit motion in one plane. ex:- joints between humerus & ulna 2) PIVOT JOINT :- Pivot joints helps in rotation internally as well as externally. It enables us to move on head up down, left right. 3) GLIDING JOINT :- It is a joint which under physiological conditions allows only gliding movements. 4) BALL & SOCKET JOINT :- It is a joint in which ball shaped surface of one round bone fix into the other cup like depression of bone. 5) FIXED JOINT :- These are found in upper jaw, skull and tooth. Teacher ask the following questions; Q1) What are joints? Q2) How many types of joints are there? Q3) where ball and socket joint is found?	Students listening carefully Students try to understand the topic. Joints are connection between bones. There are five types of joints. Ball & socket joint are found in hips.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
पुनरावलोकन : (Recapitulation)		→ To fix the gain knowledge → Summing up the taught topic → Recalling what is taught → To evaluate student	In order to recall the topic teacher ask some questions: i) The joint between the upper jaw and rest of the head is known as ? ii) How bones are move ? iii) which type of joint is elbow joint ?	students trying to give answers: It is known as fixed joint. by alternate coordination and relaxation of two sets of muscles Hinge joint is elbow joint.
गृहपाठ : (Home-Work)		→ To fix the gain knowledge → To develop self-study attitude → To use the leisure time.	Teacher give home-work to students: iii) Make a chart paper on the "types of joints".	students writing down the home work

फलक - लेखन (Black-Board Writing)

Sub - Biology
class - 8th

Date = 29/09/22

Types of Joints :-

① Ball & Socket Joints
→ It is like a ball in a socket it is rounded end of one bone fits into the hollow

② Pivot joint
→ It is freely movable joint that allows only rotary movement around a single axis.

③ Synovial joint
→ bound between bones that moves against each other, such as the joints of the limbs.
Ex :- (hip, knee)

④ Hinge joint
→ a type of joint that exists in the body and serves to allow motion primarily in one plane.

H.W. = Make a chart on "types of joints"

अभिप्राय (Remarks)

Introduction was good

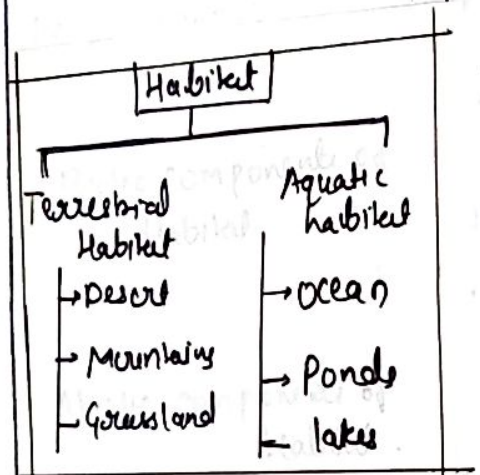
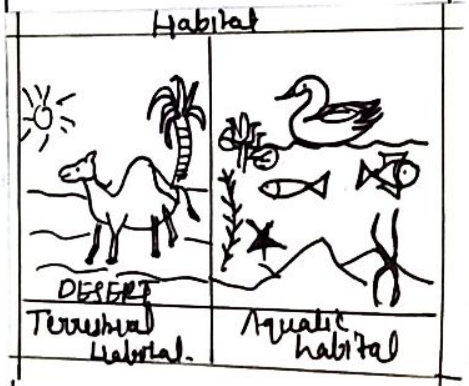
पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 04 | विषय (Subject) : Biology. | दिनांक (Date) : 7/10/22

विद्यालयाचे नांव (School Name) : Sunflower school | विषयांश (Topic) : Living organisms and their surroundings

पाठ साहित्य (Teaching Aids) : Chart paper. | पूर्वज्ञान (Previous Knowledge) : Students recognise about the topic | उपविषयांश (Sub-Topic) : types of habitats. | इयत्ता (Class) : 8th | तासिका (Period) : end | वेळ (Time) : 9:30 am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ To arose previous Knowledge. → Attractive beginning → To developing Scientific attitude → To link previous knowledge to present knowledge	Teacher ask questions on previous knowledge :- Q1) Name some places with cold weather? Q2) Name animals found there? Q3) Name a place with mostly hot and dry weather? Q4) Name some animals found there?	Students trying to give expected answers :- Jammu, Shimla, Manali are places with cold weather. polar bear. Yak are some animals live there. Desert is mostly hot and dry. Camels, snakes are mostly found in desert.
हेतूकथन : (Statement of Aim)	So, today we are	going to learn about, "types of habitats".		
विषय प्रतिपादन : (Presentation)	Habitat		Teacher explains the topic in detail : Habitat :- The place where organism live is called habitat. + provide food, water, shelter & other needs to organisms. Several kinds of plants and animals live in the same habitat.	Students looking carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	Terrestrial Habitat Aquatic Habitat		Terrestrial Habitat :- e plants and animals live on land re called terrestrial habitat. xamples: forests, grasslands, leserts, coastal & mountain regions Aquatic Habitat :- he plants and animals that live in water are called Aquatic habitats. Examples:- Lakes, rivers, oceans. Biotic components of Habitat :- he organisms both plants and animals living in a habitat are called biotic components of the habitat. Abiotic components of Habitat The non-living things such as rocks, soil, air and water in the habitat constitute its abiotic components. Teacher ask some questions: Q1) What is habitat?	Students trying to understand the topic. Habitat is a place where organism lives.
				
		Knowledge Student recall about habitat	Q2) Write two examples of biotic components of terrestrial habitats.	Examples are lion, deer are of terrestrial habitat.
		Understanding Student explain about the biotic component of h	Q3) Examples of biotic component of aquatic habitat.	Examples are fish, whales.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specification)
पुनरायलोकन : (Recapitulation)		→ To fix the gain knowledge → To evaluate the Students → Summing up the taught topic → Recalling what is taught.
गृहपाठ : (Home-Work)		→ To develop self-study attitude → To use the lesson in life.

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
In order to revise the topic teacher ask some questions :- Q1) Name some examples of terrestrial habitat? Q2) Name examples of Aquatic habitat? Q3) Why there is less plants in desert areas. Teacher gives home-work on taught topic :- Que) List and picture biotic and abiotic components of terrestrial and aquatic habitats in your notebook	Students trying to give answers Examples are grassland, Desert, forest. sea, ocean, lakes are examples of aquatic habitat. Because of the scarcity of water. students writing down the home-work in notebook.

फलक - लेखन (Black-Board Writing)

Subject = Biology Date = 7/10/14

Types Of Habitats

* Habitat :- The place where organism live is called habitat.

* Terrestrial Habitat :-
The Plants and animals live on land are called terrestrial habitat.

* Aquatic Habitat :-
The Plants and animals that live in water are called aquatic habitats.

*Biotic components of Habitat
The organisms both plants and animals living in a habitat are called biotic components of the habitat.

* Abiotic component of Habitat
Non-living things such as rocks, soil, air & water in a habitat its abiotic components

H.W ⇒ list biotic & abiotic components of terrestrial & aquatic habitat.

अभिप्राय (Remarks)

B B work was satisfactory

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.): 05 | विषय (Subject): Biology. | दिनांक (Date): 14/10/22

विद्यालयाचे नांव (School Name): Sunflower. | विषयांश (Topic): Nutrition in Animals. | उपविषयांश (Sub-Topic): Classification of animals | इयत्ता (Class): 8th

पाठ साहित्य (Teaching Aids): Chart paper, flow chart | पूर्वज्ञान (Previous Knowledge): Students know about the topic. | तासिका (Period): 2nd | वेळ (Time): 9:30 am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ Attractive beginning → To arise previous knowledge → To motivate students → To develop scientific attitude among students → To link previous knowledge with present knowledge	Teacher ask some questions based on previous knowledge :- Q1) Why do we eat food? Q2) Where do we get our food from? Q3) Name some food items that we get from animals? Q4) Does all animals eat only plants product?	Students give expected answers. We eat food to get energy. We get our food from plants and animals. Milk, honey, meat are some food items we get from animals. No, all animals does not eat plant product only.
हेतूकथन : (Statement of Aim)	So, Today we are going to learn about "classifications of animals".			
विषय प्रतिपादन : (Presentation)			Teacher explains the classification by showing a flow chart on black board :- There are three types of categories of animals :- ① Herbivores. ② Carnivores ③ Omnivores.	Students listing carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	Herbivores Classification of Animals HERBIVORE =  Carnivore =  (Lion) Omnivore =  (Human being) Omnivores Classification of animals  	Knowledge Student recall in which category human falls! Understanding Student describe Omnivore.	HERBIVORES :- The animals which eat only plants or plant products are called herbivores. Examples: Deer, Zebra, cow, elephant, goat, Panda etc. CARNIVORES :- The animals which eat other animals are called Carnivores. Examples: Bears, Lion, tiger, fox, wolf etc. OMNIVORES :- The animals which eat both plants and animals are called omnivores animals. examples: Squirrels, Dogs, Human beings. Teacher ask some questions: Q1) In which category humans falls? Q2) Give examples of carnivores animals. Q3) Define Omnivores	Human will fall in omnivores category. Tiger, Lion, fox are examples of Carnivorous animal. Those animals which eat both plants and animals.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specificatio	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
पुनरावलोकन : (Recapitulation)		→ To fix the gain knowledge → To evaluate the Students. → Summing up the taught topic → Recalling what is taught.	In order to revise the topic teacher ask some questions: Q1) List examples of herbivores, carnivores and omnivores. Q2) ~~Give~~ what are the product we get from animals.	Students by to give answers: Herbivores = cow, goat Carnivors = lion, tiger. Omnivore = Dog, human being. Milk, meat, eggs are product we get from animal.
गृहपाठ : (Home-Work)		→ To develop self-study habit. → To use leisure time → To develop creativity	Teacher gives home-work to students. Ow) Prepare a chart and paste picture of herbivores, carnivors & omnivore.	Students writing down the homework into their notebook

फलक - लेखन (Black-Board Writing)

Biology 8th Date = 14/10/14

Classification of animals.

① Herbivores :-
The animals which eat only plants or plant product are called herbivores.
Ex:- Deer, Zebra, Cow, elephant.

② Carnivores :-
The animals which eat other animals are called Carnivores.
Examples:- Bears, Lion, Tiger, fox, wolf etc.

③ OMNIVORES :-
The animals which eat both plants and animals are called Omnivores animals.
Ex:- Dog, Human being.

H.W = Prepare a chart & paste pictures of herbivorous, carnivors & omnivors

अभिप्राय (Remarks)

Good class control.

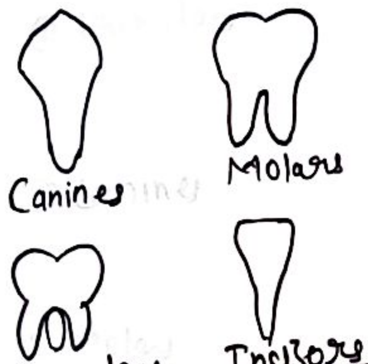
पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 06 | विषय (Subject) : Biology | दिनांक (Date) : 20/10/22

विद्यालयाचे नांव : (School Name) Sunflower | विषयांश : (Topic) Nutrition in Animals | उपविषयांश : (Sub-Topic) Types of teeth | इयत्ता (Class) : 8th.

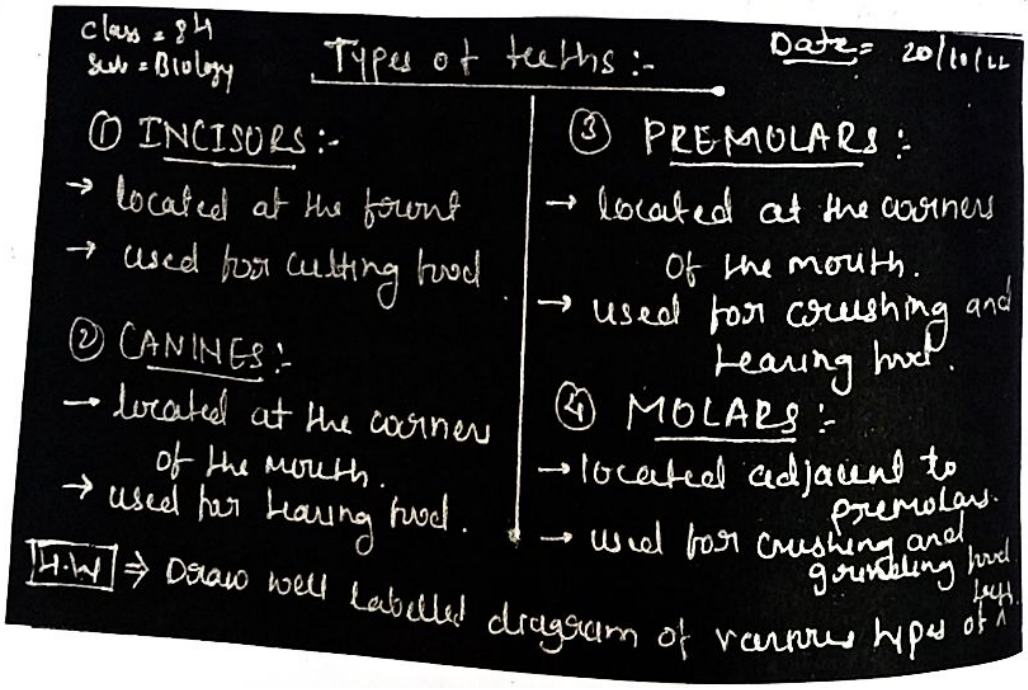
पाठ साहित्य : (Teaching Aids) Chart paper, ppt. | पूर्वज्ञान : (Previous Knowledge) Student recognise about the topic. | तासिका : (Period) 2nd | वेळ : (Time) 9:30 a.m

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specifications)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ To arise previous knowledge → Attractive beginning → Developing scientific attitude → To motivate students → To link previous knowledge to present knowledge	Teacher ask questions on previous knowledge :- 1) which part of the mouth helps in chewing the food? 2) How many teeths are there in an adult? 3) Does all the teeth look same in shape and size? 4) why our teeth break after some times?	Students give expected answers:- Teeth helps us in chewing the food. There are 32 teeth in an adult. No, teeths are different in shapes and size. because those teeths are not permanent teeth.
हेतूकथन : (Statement of Aim)	so, today we are going to learn about "Types of teeths".			
विषय प्रतिपादन : (Presentation)	MILK TEETH		Teacher explains the term milk teeth and permanent teeth. MILK TEETH :- Babies are born without any teeth. They get their first teeth between the age of two and a half years, these teeths are called Milk teeth.	Students listing carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	Permanent teeth		PERMANENT TEETH: lk teeths starts to fall out one by ue from six to twelve years and ew teeth growes in their place, nown as permanent teeth.	Students listening carefully.
	Types of teeth Types of Teeth. 		Types of teeths:- icisors:- Incisors are the shar- est teeth and have Chisel like Shape. remolars: They are called 'the aring teeth'. They are present ne on each side of the insisors remolar are used for tearing teeth. Canines: Canines are called he crack teeth and are present next to canine teeths. Molars: Molars are grinding eeths. They are broader than premolars. They are present ext to premolars.	Students trying to understand the topic.
			Teacher ask the questions:	
		Knowledge	1) Name the teeth which comes after falling of milk teeth?	permanent teeth comes after falling of milk teeth
		Student recall the answer	2) First teeth of new born baby is called?	milk teeth
		Understanding Student describe Canines.	3) What are canines called?	Canines are called the crack teeth.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specifica	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
पुनरावलोकन : (Recapitulation)		→ To fix the gain knowledge → Summing up the taught topic → Recalling what is taught → To evaluate the student	In order to recall the topic teacher ask following questions: Q1) How many types of teeths are there ? Q2) What is the use of premolars ? Q3) What are milk teeth?	Student gives expected answer There are four types of teeth. The use of premolars is to grind the food. First teeth of newborn baby is called milk teeth.
गृहपाठ : (Home-Work)		→ To develop self study habit → To use the learnt HW. → To fix the gain knowledge	Teacher gives home-work to students. One) Draw a well labelled diagram of various types of teeth.	Student writing down in notebook.

फलक - लेखन (Black-Board Writing)



अभिप्राय (Remarks)

Teaching aid used properly

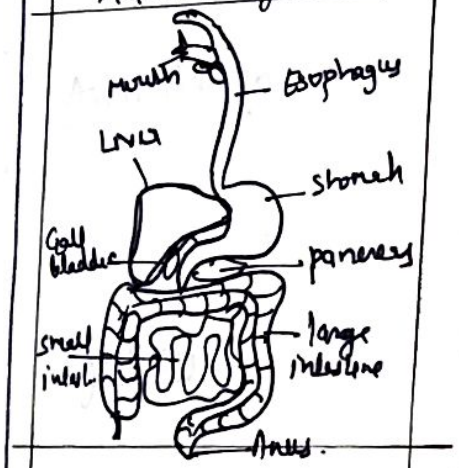
पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 07 | विषय (Subject) : Biology | दिनांक (Date) : 28/10/22

विद्यालयाचे नांव : (School Name) Sunflower. | विषयांश : (Topic) Life Process | उपविषयांश : (Sub-Topic) Steps of digestion | इयत्ता (Class) : 8th

पाठ साहित्य : (Teaching Aids) Chart paper | पूर्वज्ञान : (Previous Knowledge) Students Know something about the topic | तासिका : (Period) 2nd | वेळ : (Time) 9:30am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ To arise previous knowledge → Attractive beigning → Developing scientific attitude → To link previous knowledge to present knowledge	Teacher ask question on previous knowledge :- Q1) Why do we need food? Q2) Can animal prepare their own food? Q3) How food get transported in body? Q4) what is the system is called?	Students gives expected answers :- to get energy we need food. No animal cannot prepare their own food. Food is transported by a system. It is known as digestive system.
हेतूकथन : (Statement of Aim)	So, today we are going to learn about "Steps of Digestion"			
विषय प्रतिपादन : (Presentation)	INGESTION		Teacher explaining the concept of digestion :- INGESTION :- we take the food through mouth and the process of taking food into the body is called ingestion. food is pused down with the help of wall of the foodpipe	Students listening carefully.

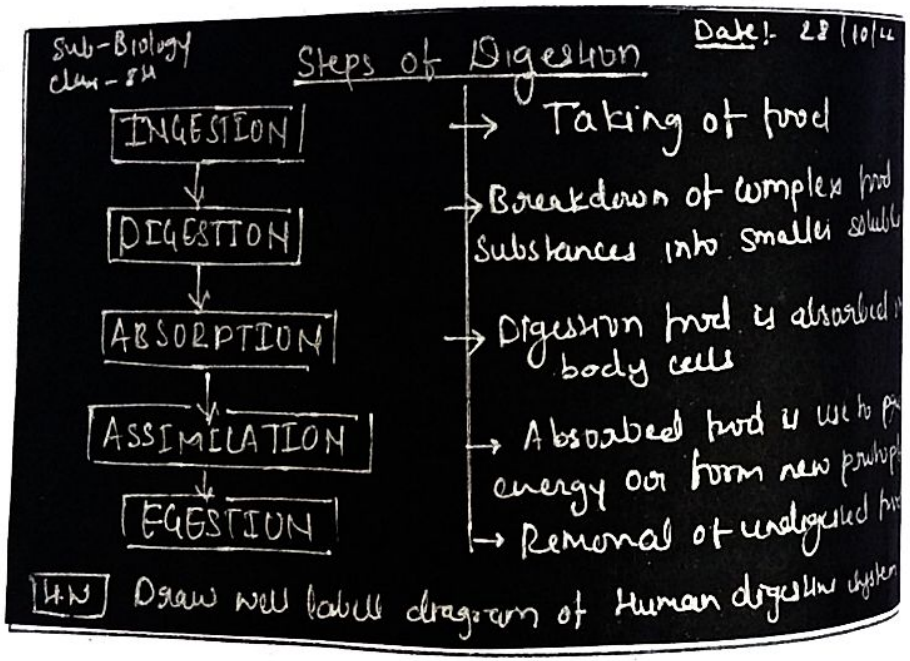
पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specifica	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	Absorption		Absorption :-	
	Human digestive System		e process in which the digested od passes into the walls of mall intestine is called bsorption.	Student listing carefully
			Assimilation :- he absorbed substances are hen transported to different organ of the body through blood essels, it is called assimilation.	
			Egestion :- arge intestine absorb water nd salts from the undigested ood and the remaining waste asses to rectum the faced matter s then removed through anus. his process of removal of undig- sted food or waste matter is alled Egestion.	Students ~~the~~ trying to understanding the topic.
	* STEPS OF DIGESTION Ingestion → Digestion → Absorption → Assimilation → Egestion		Teacher ask following questions :-	
		Knowledge Student recall about Ingestion	) What do you mean by the term Ingestion.	The process of taking food is called Ingestion.
			) What happens in the process of Egestion.	Removal of waste material is called Egestion.
		Understanding Student explain where food is digested.	3) Food is digested in which ~~is~~ organ.	~~Stomach~~ Food is digested in stomach.

पाठाच्या पायऱ्या (Spots of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specific
पुनरावलोकन : (Recapitulation)		→ To fix the gai knowled → To evaluate h Studen → Summing up t taught topi → Recalling what taug
गृहपाठ : (Home-Work)		→ To develop int Study attitud → To use the lesso him → To develop cre

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
In order to revise the topic teacher ask some questions:- 1) process of taking food into the mouth is called? 2) Food is pushed down with the help of which pipe? 3) Name all the steps involve in Digestion process? Teacher gives home-work on taught topic: (one) Draw a well labelled diagram of human digestive system on chart paper.	Students give expected answers: The process is called ingestion. Food is pushed down with the help of food pipe. The steps involve Ingestion, Digestion, Absorption, Assimilation, Egestion. Students writing down the home work.

फलक - लेखन (Black-Board Writing)



अभिप्राय (Remarks)

lesson was taken.

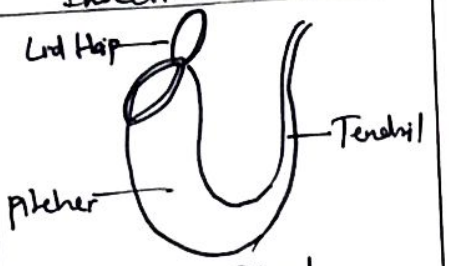
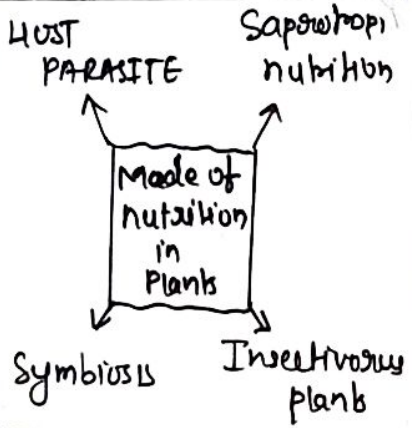
पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.): 08 | विषय (Subject): Biology | दिनांक (Date): 2/11/22

विद्यालयाचे नांव (School Name): Sunflower | विषयांश (Topic): Nutrition in Plant | इयत्ता (Class): 8th

पाठ साहित्य (Teaching Aids): Chart paper. | पूर्वज्ञान (Previous Knowledge): Student tells about the topic | तासिका (Period): 2nd | वेळ (Time): 9:30am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ Attractive beginning → To arise previous knowledge. → To Develop scientific attitude. → To Motivate students. → To link previous knowledge to present knowledge.	Teacher ask questions on previous knowledge :- Q1) Where do plants get their food from? Q2) What substance plant need to perform photosynthesis? Q3) Do all plant makes their own food? Q4) Then how will those plant survive?	Students give expected answers :- Plants prepare their own food by the process of photosynthesis They need sunlight, CO_2 and water. No some plants does not perform photosynthesis. Their mode of nutrition is diffrent.
हेतूकथन : (Statement of Aim)	so today we are going	to learn about " mode of nutrition in plants".		
विषय प्रतिपादन : (Presentation)	Host Parasite.		Teacher explains the topic in detail. Host - Parasite :- plant called cuscutta does not have chlorophyll. It takes readymade food from the plant on which it is climbing. The plant in which it climb is called host. Since it deprives the host of valuable nutrients Cuscuta is called the parasite	Students listening carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	Insectivorous Plants Insectivorous Plant.  Pitcher Plant Saprotropic nutrition Symbiosis  	Knowledge Student recall about symbiosis and give example Understanding Student explain abt

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Insectivorous Plants: The insects eating plants are called insectivorous plants. example:- The pitcher plant has a lid formed by apex of the leaf which opens and it close when an insect lands on it. The insect is digested by digestive juices secreated by pitcher plant: Saprotropic Nutrition:- The mode of nutrition in which organisms takes in nutrients from dead and decaying matter is called saprotrophic nutrition. examples: fungus Symbiosis:- some organisms live together and share both shelter and nutrients. this relationship is called symbiosis. Teacher ask some questions:- Q1) What are insectivorous plant? Q2) Example of symbiosis? Q3) Example of insectivorous plant.	Plants which eat insects. In lichens :- algae and fungi live together. Pitcher Plant.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specificatio
पुनरावलोकन : (Recapitulation)		- To fix the gain knowledg - To evaluate the student - Recalling what is taught - summing up the whole topic
गृहपाठ : (Home-Work)		- To use the leisur time. - To develop self-study habbit - To develop creativity.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
In order to revise the topic teach ask some questions : Q1) Define host - parasite relation. Q2) what is saprotropic nutrition? Q3) state an example of saprotropic nutrition. Teacher gives home-work to students. Q) Find out 5 examples of all types of mode of nutrition in plants.	Student gives expected answer: plant takes food from the other plant on which it is climbing. In which organism take nutrient from dead & decaying matter. Fungus is an ex. of saprotropic nutrition. Students writing down into their notebook

फलक - लेखन (Black-Board Writing)

Sub - Biology
class - 8th
Date = 2/11/22

mode of nutrition in plants

① HOST - PARASITE :-
→ One in which one organism, the parasite, lives off another organism, the host, harming it and possibly causing death.

② Insectivorous plants :
Plants that eat insects are called insectivorous plant.
Ex:- Pitcher plant.

③ Saprotropic nutrition
→ The mode of nutrition in which organism takes in nutrients from dead and decaying matter is called saprotrophic nutrition.

④ Symbiosis :- Some organisms live together and share both shelter & nutrients. This relationship is called Symbiosis.

H.W. = find out 5 examples of all types of mode of nutrition in plants.

अभिप्राय (Remarks)

Don't accept
Various answers.

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 09 | विषय (Subject) : Biology | दिनांक (Date) : 10/11/22

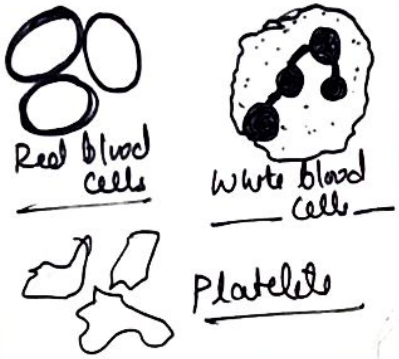
विद्यालयाचे नांव (School Name) : Sunflower school | विषयांश (Topic) : Transport in Animals

पाठ साहित्य (Teaching Aids) : chart paper | पूर्वज्ञान (Previous Knowledge) : Students know about the topic

उपविषयांश (Sub-Topic) : Blood | इयत्ता (Class) : 9th

तासिका (Period) : 4th | वेळ (Time) : 10:30 am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ To arise previous knowledge → Attractive beginning → To develop scientific attitude → To motivate students → To link previous knowledge with present knowledge	Teacher ask some questions based on previous knowledge 1) what happens when we get a cut on our skin ? 2) what is the colour of the blood ? 3) Why the colour of the blood is Red ? 4) Does blood stop flowing after some time ?	Students give expected answer :- Blood will come out. Colour of the blood is red. because it contains haemoglobin. Yes it will stop bledding after some time.
हेतूकथन : (Statement of Aim)	so, today we are going to learn about "Blood".			
विषय प्रतिपादन : (Presentation)	Blood		Blood is a connective tissue that helps in the transportation / substances. protects us from diseases & regulates the body temperature It is red colour due to a red pigment called - haemoglobin (Hb)	Students listening carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	Components of Blood  PLATELETS	Knowledge Student recall about blood. Understanding Student explains what happen with high platelets	Blood is made of several components ① RED BLOOD CELLS (RBC) :- → RBC contain pigment called Haemoglobin → Life span of RBC = 120 days → recycled in the liver and spleen. → shape of RBC is biconcave with flattened center. → RBC have no nucleus and can easily change shape. ② WHITE BLOOD CELLS (WBC) → WBC is also called - leukocytes. → WBC protects our body from infection → They are also called soldiers of our body → white blood cells are formed continually. ③ PLATELETS :- Platelets help the blood clotting process sticking to the lining of injured blood vessel on which formulate a platform. Teacher as some questions! Q1) What is blood ? Q2) What are WBC also called? Q3) What happen if higher amount of platelets are formed?	Blood is a fluid which present inside the body WBC is also called soldiers of our body * Unnessasory clotting will occur in our body.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
नरावलोकन : Recapitulation)		→ To fix the gain knowledge → Recalling what is taught → SUMMING up the whole topic → To evaluate Student	~~on the basis~~ In order to recall the topic teacher ask following questions: Q1) What are platelets? Q2) What is the life span of RBC? Q3) What makes our colour of blood red?	Student gives expected answer; Platelet makes the blood clotting process. Life span of RBC is 120 days. Haemoglobin present in blood
गृहपाठ : (Home-Work)		→ To develop self-study habit. → To fix the gain knowledge	Teacher gives homework ~~to~~ to Student: Make a list of 10 function of blood.	Student writing down the homework.

फलक - लेखन (Black-Board Writing)

Sub - Biology Date = 10/11/22
Class - 9th

BLOOD.

① RED BLOOD CELLS (RBC)
- → contains haemoglobin.
- → Life span = 120 days.
- → recycled in the liver & spleen.
- → RBCs have no nucleus and can easily change shape.

② WHITE BLOOD CELLS [WBC]
- → called leukocytes
- → protects our body from infection
- → called soldiers of our body.

③ PLATELETS :-
- → helps the blood clotting process.
- → sticks to the lining of injured blood vessels on formulate platform.

[H.W] = List 10 functions of blood.

अभिप्राय (Remarks)

Explanation was good

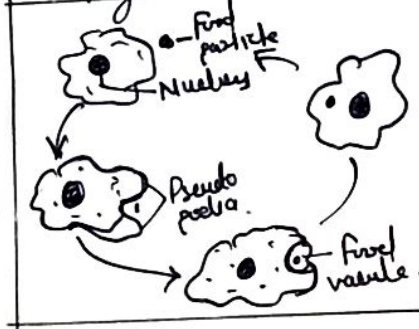
पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 10 विषय (Subject) : Biology दिनांक (Date) : 18/11/22

विद्यालयाचे नांव : (School Name) Sunflower विषयांश : (Topic) Reproduction in Animal उपविषयांश : (Sub-Topic) Digestion in Amoeba इयत्ता (Class) : 8th

पाठ साहित्य : (Teaching Aids) Chart Paper. पूर्वज्ञान : (Previous Knowledge) Student know about topic. तासिका : (Period) 2nd वेळ : (Time) 9:30am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ Attractive beginning → To revise previous knowledge → To develop scientific attitude → To motivate Student → To link previous knowledge to present knowledge.	Teacher ask questions on previous knowledge. 1) How do we take our food? 2) Where the food is digested in human body? 3) Name an organism made up of single cell. 4) Can we see amoeba with the naked eyes?	Student gives expected answers We take our food through our mouth. Food is digested into stomach. Amoeba is made up of single cell No we cannot see amoeba with naked eys.
हेतूकथन : (Statement of Aim)	So today we are going to learn about the topic, "Digestion in Amoeba"			
विषय प्रतिपादन : (Presentation)	AMOEBA		Teache explains the topic :- AMOEBA :- Amoeba is a microscopic single celled organism found in pound water. Amoeba has a cell membrane, a rounded dense neicleus and vacuoles. Amoeba constantly change its Shape and position.	

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	Digestion in Amoeba. 		It has finger like projections, called pseudopodia or false feet for movement and capture of food when it sense food, it pushes out pseudopodia around the food particle and engulfs it. The food becomes trapped in a food vacuole. Digestive juices are secreted into the food vacuole. They act on the food and break it down into simpler substances. The absorbed substance are used for growth, maintenance and multiplication. The undigested residue of the food is expelled outside by the vacuole. Teacher ask following questions: Q1) What are pseudopodia? Q2) In Amoeba, the absorption of digested food takes place in? Q3) In Amoeba, the digestion of food take place in:	the finger-like projections present in amoeba called. pseudopodia In cytoplasm The digestion of food takes place in Food vacuole.
		Knowledge Student Recall and tells about Pseudopodia. Understanding Student explains the digestion of food in Amoeb		

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
पुनरावलोकन : (Recapitulation)		→ To fix the gain knowledge → Summing up the taught topic → Recalling what is taught → To evaluate the student	In order to revise topic teacher ask some questions! Q1) Give an example of multicellular animal. Q2) What is mode of Nutrition in Amoeba? Q3) Where does Amoeba is found?	Students give expected answer: Multicellular organism is Human Beings. Mode of Nutrition in Amoeba is Holozoic Amoeba is found in pound water.
गृहपाठ : (Home-Work)		→ To develop self-study habit → To develop creativity → To use the lessons lin[...]	Teacher gives home-work to students. Q) Make a diagram of steps involve in digestion of amoeba	Student writing down homework in Notebook.

फलक - लेखन (Black-Board Writing)

Sub - Biology | Digestion in Amoeba | Date - 18/11/22

AMOEBA :-

→ Amoeba is a microscopic single celled organism found in pound water.

→ It has finger like projection called pseudopodia.

→ When it sense food it pushed out pseudopodia.

→ Digestive juices are secreated into the food

→ The absorbed substance are used for growth, maintenance.

→ The undigested residue of the food is expelled outside by the vacuole

[H.W] = Make a diagram of steps involve in digestion of amoeba.

अभिप्राय (Remarks)

presentation was good

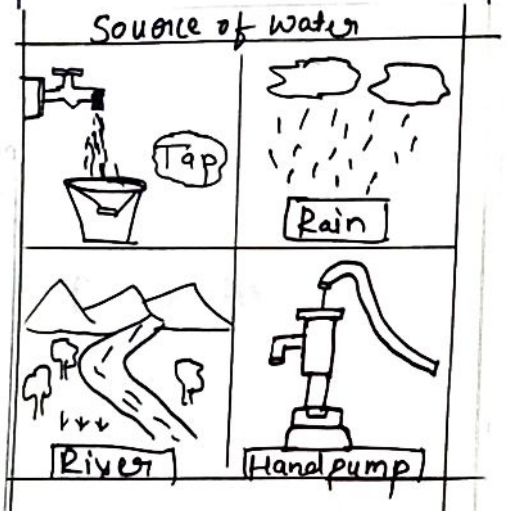
पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 11 | विषय (Subject) : Biology | दिनांक (Date) : 25/11/22

विद्यालयाचे नांव (School Name) : Sunflower | विषयांश (Topic) : Water & its Resources | उपविषयांश (Sub-Topic) : Different sources of water | इयत्ता (Class) : 9th

पाठ साहित्य (Teaching Aids) : chart paper | पूर्वज्ञान (Previous Knowledge) : Students know about the topic | तासिका (Period) : 4th | वेळ (Time) : 11:30 am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ Attractive beginning → To develop scientific attitude → To arise previous knowledge → To motivate students → To link previous knowledge with present knowledge	Teacher ask questions on previous knowledge : Q1) What would you do when you feel thirsty ? Q2) What is the main source of water ? Q3) Where do we get water from ? Q4) Does rainwater is pure water ?	Students give expected answer :- we drink water when we feel thirsty Main source of water is rain. we get water from well, pond, lakes etc. No rainwater is not pure form of water.
हेतूकथन : (Statement of Aim)	So today we are going	to study about " different source of water.		
विषय प्रतिपादन : (Presentation)			Teacher explains the topic in detail : → water is one of the natural bounties that we have. → water exist in all three States in nature :- as vapour in the air as liquid in rivers as solid in polar regions. → water covers nearly three fourth of earth surface	Students listening carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	surface water Ground water  	Knowledge Students remembe tells about surfac Understanding Students explain	* Surface water :- → Rivers, lakes and ponds are called surface water. → Surface water is used for domestic purpose and for irrigation. → Canals are constructed to carry water from surface water bodies to crop field. * Ground water :- → The reservoir of water collected above impervious called ground water. → Ground water has been utilized by diging well. → The modern way to trapping ground water is to pump it out with the help of power operated tubewells. * Rain water :- - Rain water is our primary source of water. → It is the rain that replenishes our sources of surface water. → Water on the earth is maintained to millions of years due to water cycle. Teacher ask Questions! Q1) What are surface water? Q2) What is primary source of water? Q3) Surface water is used for which purpose?	Rivers, lakes and ponds are called surface water. Rain water is primary source of water. Surface water is used for irrigation.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		→ To fix the gain knowledge → summing up the taught topic → Recalling what is taught → To evaluate the student
गृहपाठ : (Home-Work)		→ To use the leisure time → To develop creativity → To fix the gain knowledge → To develop self study habit

फलक - लेखन (Black-Board Writing)

Date - 25/11/22

sub- Biology
cls - 9th

Sources of Water

Surface water :-
Water present on the surface of Earth is called surface water.

Rain water :- Rain water is the purest form of water.

River, lakes :- The water in the water bodies comes on melting the snow.

River, sea and ocean water :-
Oceans are huge stores of water. Millions of litres of water is present in them.

Ground water :- is the water under the ground where the soil is completely filled or saturated with water.

H.W.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
In order to recall teacher ask some questions : Q1) Water exist in how many stages ? Q2) What are the examples of surface water ? Q3) What are the examples of ground water ? Teacher gives homework to students : Ques) Paste photos of different sources of water in chart paper.	Students gives expected answer :- Water exist in three stages in nature → ① as vapour ② as liquid ③ as solid. River, lakes are examples of surface water. well, tube wells are examples of ground water. Students noting the home work.

अभिप्राय (Remarks)

Recapitulation was proper and attractive

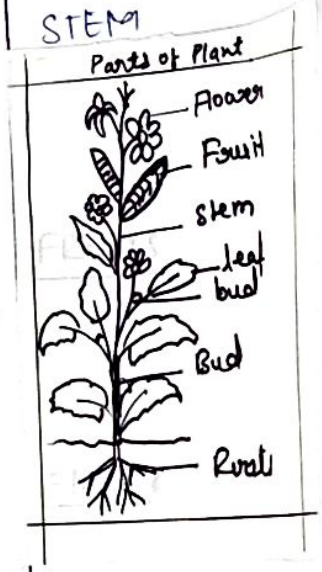
पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.): 12 | विषय (Subject): Biology. | दिनांक (Date): 30/11/22

विद्यालयाचे नांव (School Name): Sunflower | विषयांश (Topic) | उपविषयांश (Sub-Topic): Parts of Plant.. | इयत्ता (Class): 8th

पाठ साहित्य (Teaching Aids): Chart paper. | पूर्वज्ञान (Previous Knowledge): Student know about the topic | तासिका (Period): 2nd | वेळ (Time): 9:30 am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ Attractive beginning → To arise previous knowledge → To develop scientific attitute. → To link previous knowledge to present knowledge.	Teacher ask questions on previous topic: Q1) What do you eat when you are hungry? Q2) What do you eat in food? Q3) From where we get fruits and vegetables? Q4) which part of plant you eat when you are eating leafy vegtables.	Student trying to give expected answer:- We eat food when we are hungry. Vegetables, fruits, Rice, pulses. We get fruits and vegetables from plants. We eat leaves of the plant.
हेतूकथन : (Statement of Aim)	So today we are going to learn about, "Parts of plant we eat"			
विषय प्रतिपादन : (Presentation)			Teacher explains the topic; Different parts of a plant are: Root, Stem, fruit, ~~stem~~, flower, leaf. Plants does not use all the food made by leaves, they store the extra food in their different parts. * We eat these extra food stored by Plants.	Student listening Carefully.

पाठाच्या पायऱ्या Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	ROOTS STEM  LEAVES	Knowledge Students recall and tell the answer Understanding Student tell about	Teacher dessuss about each part of plants: ① ROOTS → Roots of some plants are swollen → These plant store extra food in their roots. ex: carrot, Beetroot, Radish. ② STEM We eat stems of some plant also. → These plants store their extra food in their stems Ex: Potato, Ginger, Sugarcane. ③ FRUITS → we also eat fruits of some plants as vegetables. → These plants store their extra food in their fruits. Ex: Brinjal, Tomato. ④ FLOWER we eat flowers of some plants these plant store their extra food in their flower: Ex Cauliflower, Broccoli ⑤ LEAVES Plant store their extra food into their leafs Ex: Spinach, mint. Teacher ask some questions: a) what are the different parts of plant? b) Do plant use all the food made by leaves? c) Give some examples of ~~vegetable~~ roots we eat as vegetables.	Students listening carefully. Students trying to understand the topic. leaf, root, fruit, flower and stem are different parts of plant. No, they store the extra food into their different parts. Beetroot, Radish, carrot.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
		→ To fix the gain knowledge
पुनरावलोकन : (Recapitulation)		→ To evaluate the Students → Recalling what is taught → summing up the whole topic
गृहपाठ : (Home-Work)		→ To evaluate the Students → To develop self-study habit → To use leisure time.

फलक - लेखन (Black-Board Writing)

Sub - Biology Parts of plant D: 30/11/12

① **Roots**
- Roots of some plants are swollen.
- These plant store extra food in their roots ex: Carrot, Beetroot

② **Stem**
- We eat stems of some plant ex: Potato, Ginger.

③ **Fruits**: We also eat fruits ex: Brinjal, Tomato.

④ **Flower**: We eat flower of some plants. These plant store their extra food in their flowers. ex: Cauliflower, Broccoli

⑤ **Leaves**: Plant stores their extra food into their leaves ex: Spinach, Mint, Coriander.

H.W Make well labbelled diagram of parts of plant.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
In order to revise the topic teacher ask some questions. Q1) Name some vegetables whose stem we eat? Q2) what are leaves of the plants we eat as vegetables? Q3) What else plants gives to us? Teacher gives homework to students:- One) Make a well labelled diagram of parts of Plants.	Students gives expected answer:- we eat stem of Potato, Ginger, sugarcane. Coriander, Mint, Spinach we get as vegetables. Plants gives us oxygen, fruits and vegetables also Students writing down the homework.

अभिप्राय (Remarks)

Sound should be little louder.

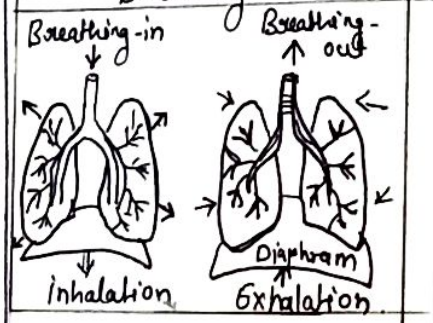
पर्यवेक्षकांची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.): 13 | विषय (Subject): Biology | दिनांक (Date): 6/11/12

विद्यालयाचे नांव (School Name): Sunflower School | विषयांश (Topic) | उपविषयांश (Sub-Topic): Breathing | इयत्ता (Class): 10th

पाठ साहित्य (Teaching Aids): Chart paper | पूर्वज्ञान (Previous Knowledge): Student learns about topic | तासिका (Period): 3rd | वेळ (Time): 10:30am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		- Attractive ~~begin~~ beginning. - To arise previous knowledge - To develop Scientific attitute - To link previous knowledge with present knowledge	Teacher ask some question related to previous knowledge. Q1) Why do we respire? Q2) What we inhale during respiration? Q3) What we exhale during respiration? Q4) Are there organisms that can survive in the absence of air?	Students gives expected answer: We respire to get energy from food or to live. We inhale oxygen during respiration. We exhale Carbondioxide during respiration. Yes, like yeast, Tetanus can survive in absence of air.
हेतूकथन : (Statement of Aim)	So, today we are going to Study about		"~~Respiration~~". Breathing	
विषय प्रतिपादन : (Presentation)			Teacher explains the topic in detail:- Breathing is only one process that delivers oxygen to where it is needed in the body and removes Carbondioxide. The number of respiratory cycles per minute is the breathing or Respiratory rate.	Students listening Carefully

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	Inhalation and exhalation Breathing Rate Breath counts Breathing  	Knowledge Student recognize o tells about Breathi Understanding Student explain a steps of breathi

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
* Inhalation and exhalation The taking of air rich in oxygen into the body is called inhalation and giving out of air rich in carbon di-oxide is known as exhalation. * Breathing Rate :- the number of times a person breath in a min. is called breathing rate. * Breath counts :- On an average an adult human being at rest breathes in and out 15-18 times in a min. During heavy exercise it increase upto 25 times per min. * Function :- Breathing has other important functions. - It provides mechanism for speech, laughter and similar expressions of the emotions. - It also used to for reflexes such as yawning, coughing & sneezing Teacher ask some ques :- Q1) Define Breathing ? Q2) Define Breathing Rate ? Q3) What are the two steps of breathing ?	Breathing is a process which absorbs oxygen into our body. The number of time a person breath in a min is called breathing rate. Inhalation & Exhalation are two steps of breathing.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		→ To fix the gain knowledge → To evaluate the student. → Recalling what is taught. → Summing up the whole topic.
गृहपाठ : (Home-Work)		→ To develop self-study habit → To develop creativity → To use the leisure time.

फलक - लेखन (Black-Board Writing)

Class - 10th
Sub :- Biology

Breathing

6/11/22

* Inhalation :-
→ Intaking of air which is oxygen.

* Exhalation :-
→ Giving out of air which is carbondioxide.

Function :- Used for reflexes such as yawning, coughing, sneezing,

* Breathing Rate :-
The number of times a person breath is called breathing rate.

* Breathing Counts :-
On an average adult human being at rest breathes in and out 15-18 times in a min.

H.W :- Make a model of inhalation & exhalation.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
On the base of taught topic teach ask some questions :- Q1) Define exhalation :- Q2) What is breathing count of a normal person? Q3) Does this count increase in any condition? Teache gives homework to student One) Make a model of inhalation & exhalation on chart paper.	Students gives expected answer :- Giving out carbondioxide such air is called exhalation. 15-18 count per min. Yes, it increases upto 25 times per min during exercise. Students writing into their notebook.

अभिप्राय (Remarks)

lesson was taken.

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.): 14 | विषय (Subject): Biology | दिनांक (Date): 14/12/22

विद्यालयाचे नांव (School Name): Sunflower school | विषयांश (Topic): | इयत्ता (Class): 10th

पाठ साहित्य (Teaching Aids): Chart paper | पूर्वज्ञान (Previous Knowledge): student know about previous topic | उपविषयांश (Sub-Topic): How dowe breath | तासिका (Period): 3rd | वेळ (Time): 10:30am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ Attractive begning. → To arise previous knowledge. → To develop scientific attitude. → To motivate student. → To link previous knowledge with present knowledge.	Teacher ask question on previous Knowledge. Q1) From where do you breath? Q2) Which air we take during inhalation? Q3) Which air we exhale during exhalation Q4) From where we take air into through?	Students give expected answers:- We breath through lungs. We take oxygen at during inhalation We exhale Carbondroxide during exhalation. We take air through our nostrils.
हेतूकथन : (Statement of Aim)	So today we are going to learn about		" How do we breath?"	
विषय प्रतिपादन : (Presentation)			Teacher explains about the topic:- Normally we take in air through our nostrils when we inhale air It passes through our nostrils into the nasal cavity. From nasal cavity, the air reaches our lungs through the windpipe.	Students listening carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
			→ Lungs are present in the chest cavity. The cavity is surrounded by ribs on the sides. A large, muscular sheet called diaphragm forms the floor of the chest cavity. → Breathing involves the movement of the diaphragm and the rib cage. → During inhalation, ribs moves up and outwards and diaphragm moves down. This movement increases space in our chest cavity and air rushes into the lungs. The lungs get filled with air. → During exhalation, ribs move down and inwards. This reduces the size of chest cavity and air is pushed out of the lungs.	Students listening carefully. Students trying to understand topic.
			Teacher asks the following questions:	
		Knowledge: Student recall and tells ~~the~~ about inhalation.	Q1) What will happen during inhalation?	Ribs move up and increase the size of the chest.
			Q2) What will happen during exhalation?	Ribs move down and reduces the size of the chest cavity.
		Understanding: Student explains about use of ~~the~~ diaph	Q3) Breathing involve movement of what?	Breathing involve ~~the~~ the movement of the diaphragm.

पाठ क्रमांक (Lesson No.) : 15

विषय (Subject) : Biology.

विद्यालयाचे नांव : (School Name) Sunflower school

विषयांश : (Topic)

उपविषयांश : (Sub-Topic) Classification of Plants.

पाठ साहित्य : (Teaching Aids) Chart paper

पूर्वज्ञान : (Previous Knowledge) Student knows about the topic.

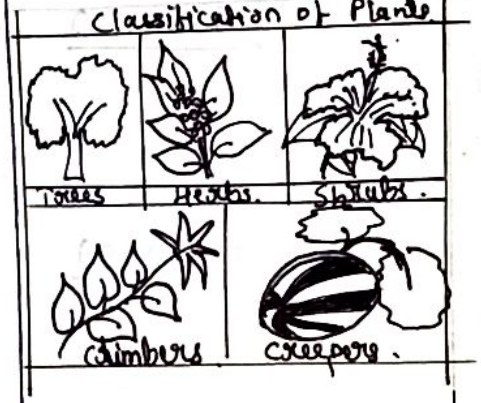
दिनांक (Date) : 20/12/22

इयत्ता (Class) : 9th

तासिका : (Period) 4th

वेळ : (Time) 11:30am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ To arise previous knowledge → Attracting begning → To motivate students. → To develop scientific attitude → To link previous knowledge to present knowledge	Teacher ask questions on previous knowledge Q1) Tell me the names of the plants that you have at your home? Q2) Do they all look similar? Q3) In what way they look different? Q4) Do all plants have flowers?	Student gives expected answers: Money Plant, Ashoka, Tomato plant, tulsi etc are plants in our home. No they are different from each other. Some are short some are hard some are soft. No all plants does not have flowers.
हेतूकथन : (Statement of Aim)	So today we are going to learn about		"Classification of Plants"	
विषय प्रतिपादन : (Presentation)	HERBS		Teacher explains the topic in detail:- HERBS :- → Herbs are small in size. → Herbs have green and tender stems ~~leaves~~. → Herbs does not have many branches. Eg:- Mint, tomato, etc.	Students listening carefully

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience)	
			शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
	SHRUBS TREE  	Knowledge Student recall and tells the classification of Plant. Understanding Students explain Climbers	SHRUBS:- → Shrubs are medium in size. → Stems of shrubs is hard but not thick Eg:- Rose plant, Bush, etc Hibiscus, TREE:- → Trees are tall in height. → They are thick and brown in the colour of the trunk → They have thick branches → Examples: Mango tree, Ashoka tree CLIMBERS:- → Climbers have weak stem. → Climbers take support and climb eg:- Money plant. CREEPERS:- - Creepers have weak stem - Creepers cannot stand upright. → Spreads on the ground. → eg:- watermelon, pumpkin. Teacher ask some questions: Q1) State the classification of plant? Q2) What are climbers? Q3) Examples of climbers?	Plants are classified into herbs, shrubs, trees, climbers & creepers) Those plants who takes support of other plant to grow Ex. of climbers are Money plant, Bean plant.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		→ To fix the gain knowledge → To ~~develop~~ evalute the students. → Recalling what is taught → Summing up the topic.
गृहपाठ : (Home-Work)		→ To develop self-study habit. → To use the leisure time. → To develop creativity.

फलक - लेखन (Black-Board Writing)

Biology — Classification of Plants — 20/12/22

HERBS
- → Herbs are small in size
- → Herbs have green and soft stems.
- → Does not have many branches.

Ex: Mint, tomato, etc.

SHURBS:-
- → Shurbs are medium in size
- → Stems of shurbs are hard

Ex: Rose Plant. but not thick

TREES:-
- → They are tall in height.
- → have thick branches.

Ex: Mango tree.

CLIMBERS:-
- → take support and climb

Ex:- Money Plant.

CREEPERS:-
- → Cannot stand upstraight
- → Spreds on ground.

Ex: watermelon.

H.W Collect the leaves of different categories of plants

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
In order to recall teacher ask some questions: Q1) What are creepers? Q2) What are the examples of creepers? Q3) What are shurbs? Teacher gives homework to students One) Collect some of the leaves of different categories of plants.	Students gives answers: Plants which spred on the ground are called creepers. Watermelon & pumpkin are examples of creepers. Shrubs have hard but not thick stem. & students writing down in notebook

अभिप्राय (Remarks)

Home work was given & it was Creative.

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 16

विषय (Subject) : Biology

विद्यालयाचे नांव : (School Name) Sunflower school

विषयांश : (Topic)

उपविषयांश : (Sub-Topic) Types of fibers.

पूर्वज्ञान : (Previous Knowledge) students know about the topic

दिनांक (Date) : 27/12/22

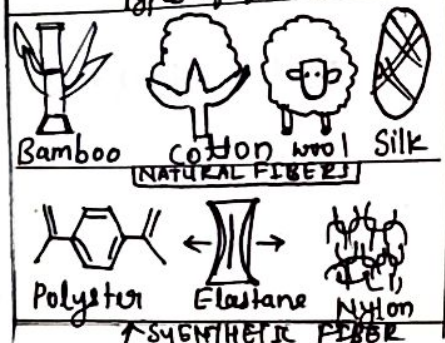
इयत्ता (Class) : 8th

तासिका : (Period) 2nd

वेळ : (Time) 9:30 am

पाठ साहित्य : (Teaching Aids) Chart paper

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरण (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		To arise previous knowledge. To motivate the students To link previous knowledge with the present knowledge. To develop scientific attitude.	Teacher ask questions based on previous knowledge Q1) What type of clothes do you wear during winter season? Q2) Why we wear woollen clothes in winter? Q3) Do you know, from where the wool comes? Q4) What part of goats does the wool obtain?	Students gives expected answers: We wear woollen clothes. because they keeps us warm. wool comes from the sheep & goats. wool is obtain from hairs of sheep & goats.
हेतूकथन : (Statement of Aim)	So today we are going to study the topic "Types of fibers".			
विषय प्रतिपादन : (Presentation)			Teacher explains about the topic by showing chart. FIBRES:- The thin strands of thread that we see are made up of ~~fibres~~ still thinner strands called Fibers. There are two types of Fibers ① Natural fibers	Student listening carefully

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	Natural Fibres Types of fibers.  	Knowledge Student recall and tells the answer Understanding Student explains synthetic fibr

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
#NATURAL FIBRES:- The fibres of some fabric such as cotton, jute, silk, wool are obtained from plants and animals. These are called natural fibres. Fibres obtained from plants: Cotton and jute. Fibres obtained from animals: Wool & silk. *Silk fibres are drawn from the cocoon of silkworm. #SYNTHETIC FIBRES:- Fibres are also made from chemical substances, which are not obtained from plant or animal sources. These are called synthetic fibres. Examples:- Polyster, Nylon, Acrylic. Teacher ask some questions:-	Students listening carefully. Students trying to understand the topic.
Q1) What are two types of fibres?	Two types of fibres are natural fibres & synthetic fibres
Q2) Natural fibres are obtained from ____ & ____ ?	from plants and animals.
Q3) Name two synthetic fibres?	Nylon and polyster are two synthetic fibres

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		To fix the gain knowledge → summing up the whole → Recalling what is topic taught → To evaluate the students
गृहपाठ : (Home-Work)		→ To develop self-study habit. → To develop creativity → To use leisure time

फलक - लेखन (Black-Board Writing)

Class:- B.Sc 8th TYPES OF FIBERS Date:- 27/12/22
Sub:- Bio

NATURAL FIBERS

The fibers of some fabric such as cotton, jute, silk, wool are obtained from plants & animals.

* Fibers obtained from Plants → cotton & jute.
* Fibers obtained from animals → wool & silk
* Silk fibers are drawn from the silkworm.

SYENTETIC FIBERS

Fibers are also made from Chemical substances,
→ Not obtained from plant or animal sources.
→ They are called syenthetic fibers.

Ex:- ① Polyster
② Nylon
③ Acrylic

H.W collect some fabric and paste them in Natural & synthetic

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
In order to revise the topic teacher ask some questions:-	Students gives expected answers;
Q1) what are the examples of fibers obtain from plants?	Jute. Cotton and wool are obtain from plants
Q2) where does silk is obtain?	silk is obtain from silkworm.
Q3) Name examples of synthetic fibers:	Nylon & Polyster are synthetic fibers.
Teacher gives homework:-	
one) collect some fabric and classify them according to their source.	Students writing down in notebook

अभिप्राय (Remarks)

Statement of aim brought out properly from students.

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 17 विषय (Subject) : Biology

विद्यालयाचे नांव : (School Name) Sunflower school विषयांश : (Topic) Microorganism friend & foe.

पाठ साहित्य : (Teaching Aids) Chart paper. पूर्वज्ञान : (Previous Knowledge)

उपविषयांश : (Sub-Topic) Friendly microorganism दिनांक (Date) : 04/01/23

Students know about the topic. इयत्ता (Class) : 8th

तासिका : (Period) 2nd वेळ : (Time) 9:30 am

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	अध्ययनानुभव (Learning Experience) शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		→ To awe previous knowledge. - Attractive begning - To motivate Students. - To develop Scientific attitute. - To link previous knowledge to present knowledge.	Teacher ask questions based on previous knowledge. Q1) what are microorganisms? Q2) Can we see microorganism by naked eye? Q3) Are their any harmful microorganisms? Q4) the microorganisms which are not harmful can be called as?	Students give expected answer: Microorganism is a tiny organism exist in single celled form or colony of cell. No, we cannot see microorganism from naked eye. Yes, some microorganisms are harmful. Friendly microorganism.
हेतूकथन : (Statement of Aim)	So, today we are going to learn about "Friendly microorganisms".			
विषय प्रतिपादन : (Presentation)			Teacher explains the topic by showing card: Microorganisms are used in various purposes. They can be used in the preperation of curd, bread & cake. → They are also used in cleaning of the environment.	Students listening carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	making of bread & curd.	
	commerical use of Microorganisms	
	*FRIENDLY MICROBES	

BENIFICIAL MICROORGANISM	
 Penicillin	Bacteria that turns milk → yogurt. 
 Bacteria for making bread	 bacteria in your intestine used in digestion.

Knowledge
Students recall and tells the commercial use of Microorganism.

understanding
Student explain conversion of sugar into alcohol

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
*making of bread & curd :-	
→ The bacterium 'lactobacillus' promote the formation of curd.	
→ Bacteria also involved in making of cheese, pickles.	
→ Bacteria and yeast are also helpful for fermentation of idli's & dosa batter.	
*commercial use of micro-organism	
→ Microorganisms are used mainly for the production of alcohol, wine, acetic acid (vinegar)	
*Medicinal use of micro-organism	
→ The sources of medicines are microorganisms.	
→ These medicine stops the growth of harmful microorganisms are called antibiotics.	
Antibiotics which are made from bacteria: ① Staphomycin ② tetracycline ③ erythromycin.	
Teacher ask some questions:	
Q1) From which microorganism a milk is converted into curd?	By Lactobacillus milk is converted into curd.
Q2) What is the comercial use of microorganism?	Making of alcohol, wine and vinegar
Q3) The conversion of sugar into alcohol is called?	Fermentation.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		→ To fix the gain knowledge → To evaluate the Students → Summing up the topic → Recalling what is taught.
गृहपाठ : (Home-Work)		→ To develop self-study habit → To use leisure time → To develop creativity.

फलक - लेखन (Black-Board Writing)

Biology 8th

Friendly microorganisms Date: 04/01/23

These examples show some of helpful uses of microorganis

① Bacteria used to ferment milk as part of cheese making

② Yeast ferments the carbohydrates found in grapes to make alcoholic wine.

③ Yoghurt is made using milk that has been soured by bacteria

④ Yeast is added to bread dough to make it rise.

⑤ Microorganism feed on leaves, plants decomposing it creating compost.

⑥ Antibiotics used to kill bacteria that cause infection Ex: Penicillium.

H.W List how microorganism help you in everyday life.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
In order to recall the topic teacher ask questions (01) what are antibiotics?	Students give expected answers Medicines which kill or stop growth of harmful microorganisms are called antibiotics.
(02) Name what antibiotics made up from bacteria and fungi?	Streptomycin, tetracycline are made up from bacteria & fungi.
(03) yeast is grown in natural sugars of which crops?	barley, wheat, rice etc.
Teacher gives homework to students : Que) List how microorganisms help you in your everyday life.	Students copying down the notebook

अभिप्राय (Remarks)

Diagram was proper and labelled nicely

पर्यवेक्षकांची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 18 विषय (Subject) :

विद्यालयाचे नांव : (School Name) Sunflower school विषयांश : (Topic) Micro-organism friend & foe.

पाठ साहित्य : (Teaching Aids) Chart paper.. पूर्वज्ञान : (Previous Knowledge)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
प्रस्तावना : (Introduction)		→ To Arise previous knowledge → Attractive beginning - Developing scientific attitude. → To link previous knowledge to present knowledge.
हेतूकथन : (Statement of Aim)	So, today we are going to learn	
विषय प्रतिपादन : (Presentation)		

Biology. दिनांक (Date) : 09/01/23

उपविषयांश : (Sub-Topic) : Harmful Microorganism इयत्ता (Class) : 8th.

Student know about states of matter तासिका : (Period) 2nd वेळ : (Time) 9:30 am

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher ask questions on previous knowledge.	Students gives expected answer.
(Q1) The micro organisms that are useful for us is called?	They are called friendly microorganisms.
(Q2) why we should keep a hankerchief on the nose and mouth while sneezing?	To prevent the spread of communicable diseases.
(Q3) Are all micro-organisms are good for us?	No, some microorganisms are harmful.
(Q4) What can we name those microorganism?	We can say them Harmful microorganisms.
about " Harmful microorganism	
Teacher explains the topic in detail.	
# HARMFUL MICRO-ORGANISMS:-	
→ The microorganisms that cause diseases in living beings are known as pathogens.	Listening carefully.
→ there are many ways in which microorganisms can harm us:	

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	FOOD SPOILAGE BY MICRO-ORGANISM	

HARMFUL MICROORGANISM

 Salmonella found in raw chicken	 Ring-worm
 E.Coli found on raw meat	 Athletes foot.

Knowledge
Student recognize and tells about pathogens

Understanding
Student explains two communicable diseases.

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
अध्ययनानुभव (Learning Experience)	

Some pathogens are transmitted through air, water & food.

The diseases which are transmitted directly from an infected person. known as:- common cold, tuberculosis etc.

Diseases caused by microorganisms in Animals:-
Foot & Mouth disease — Virus.

Diseases caused by Micro-organisms in Plants.
Rust of Wheat → Fungi
Citrus canker → Bacteria

*FOOD SPOILAGE BY MICRO-ORGANISMS

→ Bacteria, Moulds, & yeast are main causes of food spoilage.

→ Bacteria ~~on~~ can cause the spoilage of food with increased water activity. eg: Milk products.

Teacher ask some questions:-

Q1) What are pathogens?

Microorganisms that spread diseases are called pathogen.

Q2) What are communicable disease?

Disease which can be transmitted from one person to another.

Q3) State ~~&~~ two communicable disease.

Common cold and tuberculosis are both.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		→ To fix gain knowledge → To evaluate the Student. → Develop scientific attitude → To link previous knowledge to present knowledge
गृहपाठ : (Home-Work)		→ To develop self-Study habit. → To use Lisure time. → To develop creativity.

फलक - लेखन (Black-Board Writing)

Class:
Sub:

Harmful Microorganism

(1) Food poisoning can be caused by bacteria that grow on uncooked food.

(2) Chiken pox is caused by a virus. It spreads very easily.

(3) Influenza virus causes flu symptoms like headache, fever.

(4) Athlet's foot was caused by a fungus that grows between the toes.

(5) Plaque on our teeth is formed when bacteria in the mouth.

(6) The fungi that grow on food are called moulds.

Q] List some harmful microbes you see in your daily life.

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
In order to oversise the topic teache ask questions: 1) what are responsible for food spoilage? 2) what can be added to prevent food spoilage? 3) From where pathogen entry in body? Teache gives homework to Students; 4) ~~Different~~ what are friendly and Harmful Microbs you see in your everyday life.	Students give expected answers; Bacteria, moulds and yeast are the main causes of food spoilage. Preservatives are added to prevent food spoilage. Pathogen entry in our body through air, water & food. Students writing down the homework in notebook.

अभिप्राय (Remarks)

lesson was taken.

पर्यवेक्षकांची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 19 विषय (Subject) :

विद्यालयाचे नांव : (School Name) Sunflower school विषयांश (Topic) : Transpolation of substances

पाठ साहित्य : (Teaching Aids) Chart paper, 3D Module. पूर्वज्ञान : (Previous Knowledge)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
प्रस्तावना : (Introduction)		→ To raise previous knowledge - Attractive beginning → Developing scientific attitude → To link previous knowledge to present knowledge
हेतूकथन : (Statement of Aim)	So today we are going to learn	
विषय प्रतिपादन : (Presentation)		

Biology

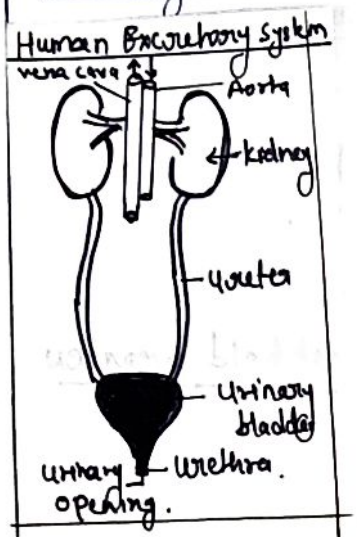
विषयांश : (Sub-Topic) Human excretory system दिनांक (Date) : 13/01/23

Just know about the topic इयत्ता (Class) : 8th

तासिका : (Period) 2nd वेळ : (Time) 9:30

अध्ययनानुभव (Learning Experience)

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
Teacher ask questions based on previous knowledge	Student gives expected answer.
1) where do we eat food?	we eat food through mouth.
2) where does the food goes after eating by mouth?	Food goes down into the stomach.
3) what will happen with food?	Food gets digested by digestive system.
4) After digestive system. what happen to the waste material?	Waste material will get out of the body.
5) what is the process called?	It is called excreation.
about " Human excretory system.	
HUMAN EXCRETORY SYSTEM.	
- process of removed of waste - are produces by the cells - the living organism is known - excretion.	Students listening carefully.
- organ that are involved in the removal of waste product from the body is called excretory system	

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	kidneys  Ureters Urethra	Knowledge Students recall and tell the parts of excretory system Understanding Student explain urinary bladder.

शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
various organs which form excretory system are as follows:- KIDNEYS:- Blood is filtered to remove these wastes. This filteration is performed by blood capallerves present in the bean shaped kidneys. The wastes that are dissolved in water are removed as urine. The kidneys receive the blood rich in oxygen from the heart through the renal artery. URINARY BLADDER:- The pouch-like structure which stores the urine produced in the kidney is known as urinary bladder. URETERS:- Two tube-like structures which connect the kidneys and the urinary bladder are called ureters. URETHRA:- Urine is sent out through the opening called urethra. Teacher ask following questions:- Q1) What are the parts of excretory system? Q2) Purification of blood is done in? Q3) What is urinary bladder?	Students listening carefully. Students trying to understand the topic. Kidneys, urinary bladder, urethra & urethra are parts of excretory system It is done in kidney. Pouch like structure which stores the urine.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
पुनरावलोकन : (Recapitulation)		→ To fix the gain knowledge → To evaluate the students → summing up the topic → Recall the taught lesson	In order to recall the topic teacher ask following questions. What is the role of urethra? What is the function of ureters? What is excretion?	Students gives expected answers. Tube arises from urinary bladder helps to expel urine out of the body Tube like structure connect the kidney to the urinary bladder. Removal of waste material from the body.
गृहपाठ : (Home-Work)		→ To develop self-study habit. → To use leisure time → To develop creativity	Teacher give home-work to students	Students writing homework into the notebook.

अध्ययनानुभव (Learning Experience)

फलक - लेखन (Black-Board Writing)

Biology 9th — Human Excretory system — 13/01/23

① Kidney
→ Dark red, bean shaped
→ Right one is slightly lower than left one.
→ Metanephric retroperitoneal in position.

② Ureter:
→ Narrow, opens into urinary bladder.
→ tubular structure.

③ Urinary bladder
→ Reservoir of urine in the pelvic cavity
→ Inner lining is composed of transitional epithelium.

④ Urethra:-
→ Canal like structure that opens to exterior by urethral orifice.

H.W. Draw well-labelled structure of excretory system.

अभिप्राय (Remarks)

Excretory system explained nicely.

पर्यवेक्षकाची सही
(Sign. of Supervisor)

पाठ क्रमांक (Lesson No.) : 20 | विषय (Subject) : Biology | दिनांक (Date) : 14/01/23

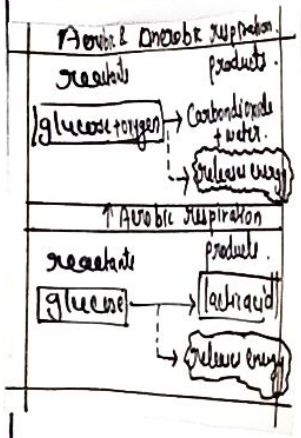
विद्यालयाचे नांव (School Name) : Sunflower school | उपविषयांश (Sub-Topic) : Aerobic and Anaerobic respiration | इयत्ता (Class) : 10th

विषयांश (Topic) : Life Processes | तासिका (Period) : 3rd | वेळ (Time) : 10:30 am

पाठ साहित्य (Teaching Aids) : chart paper | पूर्वज्ञान (Previous Knowledge) : students know about the topic.

अध्ययनानुभव (Learning Experience)

पाठाच्या पायऱ्या (Steps of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)	शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
प्रस्तावना : (Introduction)		- To arise previous Kno - Attraction beigning - To develop Scientic attitude - To link previous knowledge to present knowledge.	Teacher ask some questions:- based on previous knowledge:) When you run fast than what happen with you?) What do you get by breaking fat!) In which form you get energy?) What is Respiration?	Students give expected answers: We start to breath fast! We get Energy. We get energy in the form of oxygen. In inhalation of oxygen and exhalation of Co_2 gas is called respiration.
हेतूकथन : (Statement of Aim)	So today we are going to learn about		Aerobic and Anaerobic respiration	
विषय प्रतिपादन : (Presentation)			piration is the Movement of gen from the outside enviorment the cells within tissue, and the eval of Co_2 in opposite direct iration is of two types :- Aerobic respiration Anaerobic respiration	Students listening carefully.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
	AEROBIC RESPIRATION ANAEROBIC RESPIRATION  	Knowledge Student recall and tells about respiration Understanding Student explains about Aerobic respir

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
AEROBIC RESPIRATION :- It is a fixed Metabolic reaction that takes place in the presence of oxygen. It involves the exchange of gases between the organism and the outside environment. Process of respiration takes place in the cytoplasm & Mitochondria Glucose breaks down into CO2 and water. All higher organisms such as mammals perform this type of respiration ANAEROBIC RESPIRATION: No requirement of oxygen. Takes place in the cytoplasm only Glucose breaks down to ethyl alcohol, CO2 & energy Lower organisms such as bacteria or other prokaryotes and yeast follow this type of respiration Teachers are some questions: Which mode of respiration takes place in the presence of oxygen? Which oxygen takes place in the absence of oxygen	Students listening carefully Student trying to understand the topic. Aerobic respiration takes place in presence of oxygen. Anaerobic respiration takes pla in absence of oxygen.

पाठाच्या पायऱ्या (Spets of Lesson)	अध्यापन मुद्दे (Teaching Points)	उद्दिष्टे व स्पष्टीकरणे (Objectives with Specification)
पुनरावलोकन : (Recapitulation)		→ To fix the gain knowledge → To ~~develop~~ evaluate the students → summing up the whole topic → Recalling what u taught
गृहपाठ : (Home-Work)		→ To use leisure time → To develop self-study habit → To develop creativity

फलक - लेखन (Black-Board Writing)

Sub - Biology
Class - 10th

Type of Respiration

Date - 14/01/23

AEROBIC RESPIRATION	ANAEROBIC RESPIRATION
→ It involve in exchange of gas between the organism and the outside environment	→ No requirement of oxygen
→ Takes place in presence of oxygen	→ Glucose breaks down to ethyl alcohol & energy
→ Glucose breaks down into CO_2 and water.	→ Found in lower organisms

H.W. State the difference between Aerobic & Anaerobic respiration

अध्ययनानुभव (Learning Experience)	
शिक्षक कृती (Teacher Activity)	विद्यार्थी कृती (Pupil Activity)
In order to revise teacher ask questions : What is Respiration?	Students trying to give answer ; Movement of in & out of air through lungs
Write two type of Respiration?	There are two types of respiration; ① Aerobic respiration ② Anaerobic respiration
Name main type of Anaerobic respiration	Lactic acid fermentation
Then teacher gives homework to Students :- State the difference between aerobic respiration and anaerobic respiration	Students writing down the homework

अभिप्राय (Remarks)

lessm was good and
Teaching aid was proper.

पर्यवेक्षकाची सही
(Sign. of Supervisor)