MICRO LESSONS

INDEX

Teaching Subject..... Physical Science .....

Lesson No.	Topic
1.	Mechanical Energy
2.	Heat
3.	Sound
4.	Food Preservatives
5.	Light.

Teacher's Signature

Lesson - 1.

P.T. Name - Sapna
P.T. Roll No - 07.
Subject - Physical Sc.
Topic -

Class - 8th
Date - 12-09-16.
Duration - 5-6 min.
Av. Age of Students - 13 years.

Skill of Introducing a Lesson

Pupil Teacher's Activity	Student's Activity	Component of skill
Pupil teacher asked student what do we require for doing work.	Energy	Use of previous knowledge.
What is Energy?	The ability to do a work is called Energy.	Use of Previous knowledge.
Yes, Very good can you tell what is SI unit of Energy?	Joule	Maintainance of Previous knowledge
What are different forms of Energy?	1. Mechanical Energy 2. Heat Energy 3. Light Energy	Use of previous knowledg

Pupil Teacher's Activity	Student's Activity	Component of skill
	4. Magnetic Energy 5. Kinetic Energy 6. Potential Energy	
If a body is moving what kind of energy it possess?	Students get confused and gave no response.	Relevancy of verbal & non-verbal behaviour.

Announcement of the Topic :-

Well, Students today we will learn about Mechanical Energy.

COMPONENT	RATING SCALE
	V.Poor Poor below Av. Good V.Good
1. Desirable Behaviour	0 1 2 (3) 4 5
2. Checking the Previous knowledge	0 1 2 3 (4) 5 6
3. Using of Teaching Aids	0 1 2 3 (4) 5 6
4. Maintenance of continuity.	0 1 2 (3) 4 5 6
5. Relevancy of verbal and non-verbal behaviour.	0 1 2 (3) 4 5 6

Any Comment.

Signature

Lesson - 2.

P.T. Name - Sapna Class - 8th
P.T. Roll No. - 07. Date - 13-09-16.
Subject - Ph. Science Duration - 5-6 min
Topic - Heat Av. Age of students - 13 years

Skill of Questioning.

Pupil Teacher's Activity	Student's Activity	Component of skill
What is natural source of light and heat?	Sun	Relevancy clarity of Questions
Write few example of artifical source of heat?	Coal, Stove, LPG Gas etc.	Relevancy clarity of Questions.
What is responsible for production of heat in artifical sources?	Fuel, Burner	Relevancy clarity of Questions.
Can you give some exaulple	Rubbing of match box stick against the	Preciseness of Questions

Pupil Teacher's Activity	Student's Activity	Component of skill
whether you get heat by burning?	Coated surface by rubbing stone.	
Some of you might have used an electric heater. How does it get heated?	flow of Electric current.	Relevancy and clarity of Questions
Write few applications of this effect?	Electric press, electric oven, Washing machine, electric bulb etc.	Relevancy and preciseness of Questions
How does electric bulb give light to us?	When filament get electricity. It gets heated and thus able to produce light.	Relevancy and clarity of Questions.

COMPONENT	Rating Scale.					
	V. Poor	Poor	Below Av.	Av.	Good	V. Good
1. Relevancy of Questions	0	1	2	(3)	4	5
2. Clearity of Questions	0	1	2	3	(4)	5
3. Preciseness of Questions	0	1	2	3	(4)	5
4. Use of appropriate grammer.	0	1	2	(3)	4	5
5. Level of Questions Speed Voice of teacher pause.	0	1	2	3	(4)	5

Lesson-3.

P.T. Name - Sapna Class - 8th
P.T. Roll No. - 07 Date - 14-09-16.
Subject - Ph. Science Duration - 5-6 min.
Topic - Sound Av. Age of students - 13 yrs.

Skill of Illustration with Examples

Pupil Teacher's Activity	Student's Activity	Component of skill
When phone is ringing what did it produce?	Sound with vibration	Relevant examples & Interesting.
What do you feel when you touch the ringing phone?	Feel vibration	Inductive Approach.
Similarly, if you strike the steel glass with spoon & touch it. What do you get?	Feel Vibration	Relevant example. and Simple example.

Pupil Teacher's Activity	Student's Activity	Component of Skill
Does Harmonium also produce vibration?	Yes	Relevant & Simple example
What did you conclude from it?	All vibrating bodies produce sound.	Inductive approach.
Showing dustre and beat on chalkboard, what did it produce?	Sound	
Give another examples in which the vibrating body/object produced sound.	When we place the wire of sitar and when we play the wires of tambura, then it produces sound.	Relevant and Simple examples with inductive approach
Can you define sound now?	Sound is a form of energy produced by vibrating objects and which gives us sensation of hearing.	Inductive Approach.

COMPONENT	RATING SCALE
1. Formulating relevant example	0 1 2 (3) 4 5 6
2. formulating Simple examples.	0 1 2 3 (4) 5 6
3. formulating interesting examples.	0 1 2 3 (4) 5 6
4. Use of appropriate media.	0 1 2 (3) 4 5 6
5. Inductive and the deductive energy.	0 1 2 (3) 4 5 ,6

Lesson - 4.

P.T. Name - Sapna | Class - 8th
P.T. Roll No. - 07. | Date - 15-09-16.
Subject - Ph. Science | Duration - 5-6 min.
Topic - Food Preservatives | Av. Age of students - 13 years

Skill of Stimulus Variation

Pupil Teacher's Activity	Student's Activity	Component of skill
→ Students, where do we put vegetables, fruits, milk at home?	In Refrigerators.	Gesture.
→ If we don't put them in refrigera-tor, what will happen? (Moving to last row).	Vegetables, Milk and food will get easily spoil.	Movement and aural-visual switching.
→ But when we purchase pouches of Jam, pickle etc. from market	In pouches, some extra substances or chemicals are added.	Change in interaction style.

Pupil Teacher's Activity	Student's Activity	Component of skill
it never get easily spoiled or its expiry date is approx. 1 year after manufacturing.		
→ Do you know, what are these chemicals called.	Food preservatives.	Change in voice & Teacher-da interaction
→ So, Students now tell me what do you understand by term food preservatives. (writing on Blackboard)	The chemical substances added to food to preserve it from getting spoiled are called Food Preservatives.	Body mover and aural visual Switching.

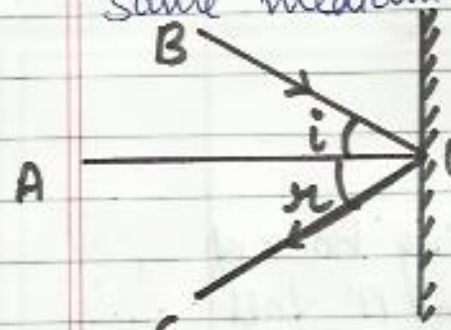
COMPONENTS	Rating Scale (V.Poor 0, Poor 1, below Av. 2, Av. 3, Good 4, V. Good 5, Excel 6)
1. Body Movement	0 1 2 (3) 4 5 6
2. Gesture	0 1 2 3 (4) 5 6
3. Change in voice	0 1 2 3 (4) 5 6
4. Focussing	0 1 2 (3) 4 5 6
5. Change in intraction style	0 1 2 (3) 4 5 6
6. Pausing	0 1 2 3 (4) 5 6
7. Aural - Visual Switching	0 1 2 (3) 4 5 6
8. Physical involvement of the students.	0 1 2 (3) 4 5 6

Lesson-5.

P.T. Name - Sapna Class - 8th
P.T. Roll No. - 07 Date - 16-09-16.
Subject - Ph. Science Duration - 5-6 min.
Topic - Light. Av. Age of Students - 13 yrs.

Skill Of Explaining

Pupil Teacher's Activity	Student's Activity	Component of skill
Students as you know beam of light is one of the most important of all over senses. It is the only medium through which we can enjoy the colour of the rainbow or watch flower & other objects. But have you ever thought that now we all are able to see things? So, students today we will study Reflection of Light. Reflection is bouncing	Listening carefully and drawing diagram.	Using essential links.
	Listening Carefully and noting down in notebook.	Appropriate beginning statements.

Pupil Teacher's Activity	Student's Activity	Component of Skill
back of light when it fall on polished surface in same medium.  In the given diagram, AB is the object, BO is the incident ray. A ray of light which falls on the mirror, O is the point of incidence. The point at which incident ray strike the mirror, AO is normal, a line which is perpendicular to the mirror surface at the point of incidence. OC is reflected ray, a ray of light which is sent back by mirror.	Listening carefully and observing the diagram. Students are observing keenly.	Covering essential points. Covering essential points.

Pupil Teacher's Activity	Student's Activity	Component of skill
i.e. $\angle i$ is the angle of incidence. The angle between incident ray and normal $\angle r$ is the angle of reflection. Now students answer me some questions. What is reflection of light?	Students are noting down in their notebook. The bouncing back of light when it fall on shiny or polished surface	Appropriate concluding statement.

COMPONENT — RATING SCALE

→ Desired Behaviour	V.poor	poor	B.Av.	Av.	Good	V.Good	
Beginning statements	0	1	2	3	(4)	5	6
Explaining links	0	1	2	3	(4)	5	6
Covering essential points	0	1	2	3	(4)	5	6
Use of visual techniques.	0	1	2	(3)	4	5	6
Testing pupils understanding.	0	1	2	(3)	4	5	6
Concluding statements.	0	1	2	(3)	4	5	6

→ Undesired Behaviour.	V.Poor	poor	B.Av.	Av.	Good	V.Good	
Irrelevant statements	0	(1)	2	3	4	5	6
Lacking continuity in statements	(0)	1	2	3	4	5	6
Lacking influency.	0	(1)	2	3	4	5	6
Using vague words and phrases	(0)	1	2	3	4	5	6

MEGA LESSONS

INDEX

Teaching Subject..... Physical Science .....

Lesson No.	Topic
1.	Motion & Types of Motion
2.	Force and Its Types
3.	Structure of Atom.
4.	Chemical Reaction.
5.	Diffusion

Teacher's Signature

Lesson - 1.

P.T. Name - Sapna	Class - 9th
P.T. Roll No. - 07.	Date - 19-09-16.
Subject - Ph. Science	Av. Age of Students - 14 yrs.
Topic - Motion & Types.	Duration - 36 min.

Instructional Objectives

After going through the lesson students will be able to →

- Recall the definition of Motion.
- Recognise the different types of motion.
- Students will be able to give the example for different types of motion.
- Calculate the distance, time, speed and velocity of an object.

INSTRUCTIONAL AIDS

General : Chalk, duster, chalkboard, pointer etc.

Specific : Measuring scale.

PREVIOUS KNOWLEDGE ASSUMED

Pupil teacher assumes that student must know the fundamental term motion.

PREVIOUS KNOWLEDGE TESTING -

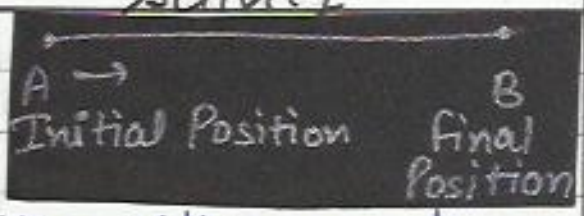
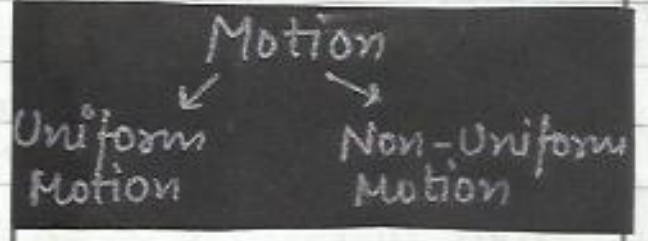
Pupil Teacher's Activity	Student's Activity
→ Students, if I am going from there to there (Moving), then what I am doing?	Changing the position
→ Do you know, what this term is called?	Yes Sir, This is called motion.
→ Very good, Do you know what are different types of motion?	No response.

ANNOUNCEMENT OF THE TOPIC

Well students today we will study about motion, its types and formulae to calculate different terms related to motion.

Presentation -

Teaching point	Pupil Teacher's Activity	Student's Activity
Definition	What do you mean by motion?	by The change in position of an object from

Teaching point	Pupil Teacher's Activity	Student's Activity
		one place to another place is called motion.
Distance	The difference of final position and initial position.	Listen carefully.
Types of Motion		
Uniform Motion	If an object covers equal distance in equal interval of time, then the motion is called uniform motion.	Students are listening carefully and noting down in notebook.
Non-uniform Motion	An object is in non-uniform motion if it covers unequal distance in equal interval of time.	Students are noting down in their notebook.
Example.	A car is moving a distance of 50m in 1st 2s and distance of 60m in next 2s. Then it is non-uniform.	Trying to understand.

Teaching point	Pupil Teacher's Activity	Student's Activity
Definition of speed	Distance covered by an object per unit time is called speed. $$\text{Speed} = \frac{\text{Distance}}{\text{Time}}$$	Students are listening carefully.
Velocity	Change in position of an object per unit time is called velocity.	
	Can you write down the fondula to calculate the velocity. $$\text{velocity} = \frac{x_2 - x_1}{t_2 - t_1}$$	No response.
Example.	If the meter of car read 2000km at the start of trip and 2400km at the end point of trip and it takes 8h then calculate the velocity of car.	As velocity = $\frac{x_2}{t_2}$ Velocity = $\frac{2400-2}{8h}$ $= \frac{400\,km}{8h}$ $= 50\,km/h$.
Uniform Circular Motion	If an object moves in circular path with uniform speed then it is called	Students are noting down

Teaching Point	Pupil Teacher's Activity	Student's Activity
	Uniform circular motion. Here, velocity is → velocity = $\frac{2\pi r}{t}$. r = Radius of circle t = Time.	carefully in their notebook.

RECAPITULATION -

- What is Motion?
- Types of Motion?
- formulae for speed, velocity.

HOME ASSIGNMENT -

- Learn the definition and formulae.?
- Differentiate between Speed and velocity.
- Calculate the velocity of car if it starts from A (500km) and stop at B (800 km) in 5 hours. Calculate the velocity of car.

Any Comments -

Signature

Lesson 2.

P.T. Name - Sapna	Class - 9th
P.T. Roll No. - 07.	Date - 20-09-16.
Subject - Ph. Science	Duration - 36 min.
Topic - Force and its types.	Av. Age of Students - 14

INSTRUCTIONAL OBJECTIVES

After going through the lesson students will be able to →

- Recall the definition of force.
- Recognise the different types of force.
- Differentiate between different type of forces.
- Relate the concept of force to their daily life.
- Calculate the value of force.

INSTRUCTIONAL AIDS

General : Pointer, chalk, duster, pointer, chalkboard

Specific : Chart, figure related to motion, Spring

PREVIOUS KNOWLEDGE ASSUMED

Pupil Teacher assumes student must know the fundamental concept of motion, Push and Pull.

PREVIOUS KNOWLEDGE TESTING

Pupil Teacher's Activity	Student's Activity
→ What is motion?	The change in position of an object from one place to another place is called Motion.
→ What will happen if I pull this chair (Pulling the chair towards P.T.)	Chair will change its position and move towards you mam.
→ If I push this door towards, then what will happen?	The door will get opened.
→ Students, do you know what is this push or pull called?	No response.

ANNOUNCEMENT OF THE TOPIC

Well, students today we will study about force, its types and examples.

Presentation →

Teaching Point	Pupil Teacher's Activity	Student's Activity
Definition of force	force is the push or pull on a body which either change or tends to change its position.	Students are listening carefully.
Example.	Showing the chair, when I push it, it change its position.	Students are watching interestingly.
	Give one more example?	The hockey stick hit the ball forward.
Properties of force	→force change the state of motion. →force may change the direction of motion and shape and size.	
Example for change of shape	Showing a spring, A spring expands when it is pulled outwards and it contacts when it is pushed inwards.	Students are listening and taking interest.
	Give another example.	A rubber band change its shape.

Teaching Point	Pupil Teacher's Activity	Student's Activity
Type of force	Force ↙ Balanced force ↘ Unbalanced force	due to force. Students are noting down. in their notebook carefully.
Balanced force	When the forces applied on both sides of object in opposite direction and both are equal so that object can not move, it is called balanced force.	
	→ □ ← Balanced	Students are taking interest
Unbalanced force	When the force applied on an object from two opposite sides are not equal so that it causes motion of body.	Students are noting in notebook..
	→ □ ← (i) → □ ← (ii) Find which is balanced & which is unbalanced..	Main fig. (i) is balanced force and fig (ii) is unbalanced force
S.I. Unit	The S.I. unit of force is Newton (N).	Students are listening.

Teaching Point	Pupil Teacher's Activity	Student's Activity
Frictional force	It is the force created between two surfaces in contact or sliding on each other.	Students are trying to understand.
Example	A man walking on Road.	
	Give another example?	Applying brakes on Riding bicycle

RECAPITULATION :-

- What is force?
- Define different types of force?
- What do you mean by frictional forces?
- What effect are observed in daily life due to friction?
- What are S.I. units of Newton?

HOME ASSIGNMENT :-

- Learn definitions of force and its types.
- Differentiate between Balanced and unbalanced forces?
- Write atleast four effect of frictional force in our daily life.

Any Comments?

Signature

Lesson - 3.

P.T. Name - Sapna Class - 9th
P.T. Roll No.- 07 Date - 21-09-16.
Subject - Physical Science Duration - 36 min.
Topic - Structure of Atom. Av. Age of Students - 14yrs.

INSTRUCTIONAL OBJECTIVES

After going through the lesson the students will be able to -

- Recall the structure of atom.
- Recognise the different subatomic particles present in atom.
- Give right example of use of atomic structure in different matter.
- to locate the different particles of an atom.
- Evaluate why J.J. Thomson (watermelon Model) was not accepted.

INSTRUCTIONAL AIDS

General : Pointer, chart, Chalk, Chalkboard etc.

Specific : Chart & Model showing model of J.J. Thomson Model.

PREVIOUS KNOWLEDGE ASSUMED

Pupil teacher assumes that the students must know

the fundamental of matter and about atom.

PREVIOUS KNOWLEDGE TESTING

Pupil Teacher's Activity	Student's Activity
→ What is an atom?	It is the smallest unit of matter.
→ What are subatomic particles?	The particles contained in atom are subatomic particle
→ Name different subatomic particle?	electron, proton, neutron.
→ What is charge on subatomic particles?	electron (-ve), prioton (+ve), neutron (no charge).
→ Where these subatomic particles are located?	No Response.

ANNOUNCEMENT OF THE TOPIC

Well students today we will study about structure of atom.

Presentation:

Teaching Point	Pupil Teacher's Activity	Student's Activity
Various Models for explaination of atom.	Various model proposed by different scientist are - 1. J. J. Thomson Model 2. Rutherford Model	Students are listening carefully and noting down in notebook.

Teaching Point	Pupil Teacher's Activity	Student's Activity
	3. Neils Bohr	
J.J. Thomson Model	It is also known as water-melon model.	Students are noting down in notebook carefully.
Ist postulate	According to J.J. Thomson + (i) An atom is a +vely charged sphere and electrons are embedded in it.	
Explaination	According to J.J. Thomson, the red part of watermelon is compared to positively charged sphere and electrons are embedded in it like seeds. (Black seeds)	Students are taking interest.
IInd postulate	(ii) The electron is wholly neutral such that the total +ve charge is equal to negative charge.	Students are noting down in notebook.
Explaination	According to second postu-late of J.J. Thomson, the protons (+ve charge) and electron (-ve charge) are equal and thus atom is neutral.	Students are trying to understand.
Limitation	He was not successful in explaining the stability of atom	Students are listening

Teaching Point	Pupil Teacher's Activity	Student's Activity
	and didn't tell about neutron.	carefully.
	Limitation → J.J. Thomson Model could not explain the stability of atom and concept of neutron.	
More Models	To overcome the limitation of J.J. Thomson's Model. Two more models were given by Rutherford & Neils Bohr which explain the stability of atom.	Students are actively listening.

RECAPITULATION -

- What are subatomic particles of atom?
- Give the postulates of J.J. Thomson's Model?
- Limitation of J.J. Thomson Model.

HOME ASSIGNMENT -

→ Learn Postulates and limitation of J.J. Thomson Model

Any Comments -

Signature

Lesson 4.

P.T. Name - Sapna Class - 9th
P.T. Roll No.- 07. Date - 22-09-16.
Subject - Physical Science Duration - 35-40 min.
Topic - Chemical Reaction No. of Students - 32. (approx)

INSTRUCTIONAL OBJECTIVES

After going through the lesson, the students will be able to -

:→ Recall the definition of chemical Equation.
:→ Recognise the types of chemical Reaction.
:→ Analyse the example of types of chemical Reaction.
:→ Differentiate between different types of chemical Reactions.
:→ Evaluate the type of Reaction from the Given Reaction.

INSTRUCTIONAL AIDS

General : Chalk, chalkboard, pointer etc.

Specific : Chart showing different reactions

PREVIOUS KNOWLEDGE ASSUMED

Pupil teacher assumes that what are compounds and what are chemical change.

PREVIOUS KNOWLEDGE TESTING

Pupil Teacher's Activity	Student's Activity
→ If milk is left at room temperature during summer, what will happen?	It will convert in to curd.
→ What happens during respiration?	Glucose by absorbing O_2 gets converted in CO_2. Chemical change.
→ Do you know what these changes are called?	No Response.
→ Do you know how these changes can be represented by Equation.	

ANNOUNCEMENT OF the TOPIC

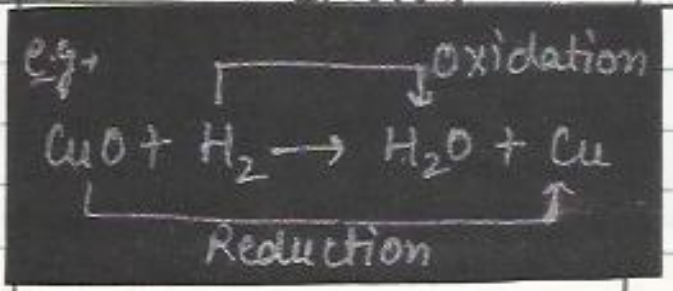
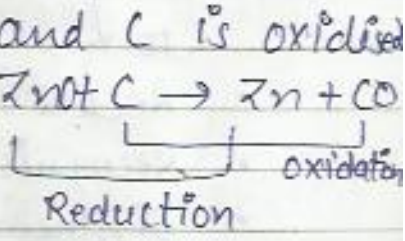
Well students today we will learn about the chemical Reactions and Equations.

Presentation -

Teaching Point	Pupil Teacher's Activity	Student's Activity
Definition of Chemical Reaction	A process in which one or more compounds combine to form new compound or more than one compound is called Chemical Reaction.	Students are listening carefully and noting down in their notebook.

Teaching Point	Pupil Teacher's Activity	Student's Activity
	e.g. $A + B \longrightarrow C + D$	
Combination Reaction	A process in which one or more substances combine to form a new compound is called combination Reaction.	Students are noting down in their notebook.
General Equation	$A + B \rightarrow AB$ e.g. $C + O_2 \rightarrow CO_2$	Students are seeing on chalkboard interestingly.
Decomposition Reaction	The Reaction in which a single compound breaks down in to two or more simpler compounds on heating. General Eqn → $AB \rightarrow A + B.$ e.g. $CaCO_3 \xrightarrow{\Delta} CaO + CO_2$	Students are listening carefully and trying to understand.
Displacement Reaction	During a chemical reaction when one element displaces the other element from another compound is called Displacement Reaction.	Students are noting down in notebook.

Teaching Point	Pupil Teacher's Activity	Student's Activity
	General Equation → $A + BC \longrightarrow AC + B$. e.g. $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$	Students are trying to think some examples but unable to get.
Double Displacement Reaction	The reaction in which two salt reacts with each other such that the elements of both compounds gets exchanged to form new compounds and one of them occurs of precipitates. Gen. Eq.ⁿ → $AB + CD \longrightarrow AD + CB$ e.g → $Na_2SO_4 + BaCl_2 \rightarrow BaSO_4 + 2NaCl$ Students here Na displace Ba and form NaCl and Ba form $BaSO_4$ as ppt.	Students are noting down in their notebook.
Oxidation & Reduction	Oxidation is addition of oxygen and Reduction is addition of Hydrogen. The reaction combined is called Redox Reaction.	Students are taking interest.

Teaching Point	Pupil Teacher's Activity	Student's Activity
	e.g. 	
	Students can you tell me which of compound is oxidised and which is reduced in given reaction. 	Yes, Ma'm here ZnO is reduced and C is oxidised 

RECAPITULATION -

- Types of Chemical Reaction.
- Names of Type of Reactions.
- Give examples for each type of Reaction.
- Differentiate between different types.

HOME ASSIGNMENT -

→ Do all examples for chemical Reactions in NCERT book.

Any Comments -

Signature

Lesson - 5.

P.T. Name - Sapna Class - 8th
P.T. Roll No. - 07. Date - 23-09-16.
Topic - Ph. Science (Diffusion) Duration - 35-36 min.
Subject - Ph. Science Av. Age of Students - 13.

INSTRUCTIONAL OBJECTIVES -

After going through lesson, students will be able to -

- Recall the definition of Diffusion.
- Recognise different examples of Diffusion.
- Differentiate between diffusion in different states of matter.
- Give examples for Diffusion and compare their ability between different solids, liquid etc.
- Make table of comparison of properties of different states of matter for diffusion.

INSTRUCTIONAL AIDS -

: Chalk, duster, pointer, chalkboard etc.

: Chart showing difference between differe states of matter for diffusion.

PREVIOUS KNOWLEDGE ASSUMED -

Pupil teacher assumes that students must know

about different states of matter and about arrangement of particles in different states.

PREVIOUS KNOWLEDGE TESTING →

Pupil teacher's Activity	Student's Activity
→ Do you know what are fluids?	Yes, Mam the substance which can flow are called fluids.
→ Do you know what is main difference between gas and liquid?	Mam, Gas can flow/ spread more fastly than liquid.
→ Can you smell perfume away from point of spreading	Yes Mam, after few seconds we can smell it.
→ Do you know how it happens?	No Response.

ANNOUNCEMENT OF THE TOPIC -

Well students today we will study about diffusion and diffusion in all states (liquid, solid and gas)

Presentation →

Teaching Point	Pupil Teacher's Activity	Student's Activity
Definition of Diffusion	The random thermal motion of atom, molecules etc. in solid, liquid & gases from one part of	Students are listening carefully and noting down in notebook.

Teaching Point	Pupil Teacher's Activity	Student's Activity
	medium to another part is called diffusion.	
Diffusion in Different states.	Diffusion can take place in different states of matter given as →	
Diffusion in Gas.	Diffusion in Gases → When gas like smell of perfume exits the nozzle of bottle and get free in room and spread through all over the room after mixing with air is called diffusion of Gas.	Students are listening carefully and imagining the smell of perfume spread the room.
	Here, the smell is maximum at nozzle of bottle and after existing from nozzle it spreads all around the room i.e. gas moves from more conc. to less.	
Question	Students can you give more example for the same? Very Good.	Yes Ma'm the smell of LPG gas leaks from Gas cylinder

Teaching Point	Pupil Teacher's Activity	Student's Activity
Diffusion in liquid	Diffusion in liquid → Diffusion also happens in liquids means high concentration to low-concentration of liquid. For Example → If you drop a little bit of paint in to a jar of water the colour will spread slowly.	Students are listening carefully and noting down in their notebook.
Diffusion in Solid	Diffusion in Solid → As we know, there are large amount of force of attraction in solid is very high So, the Diffusion in solid is very slow. E.g. → Write something on chalk board and left it for a long time. Now, we observe that rubbing is so difficult.	Students are listening carefully and noting down in their notebook. students are taking interest and trying to understand.

RECAPITULATION :-

- What is diffusion?
- How many types of Diffusion?
- Give example of Diffusion of Gases?
- Give example of Diffusion of Liquid?

HOME WORK :-

Make a chart which classify the Diffusion in different state.

(i) Solid
(ii) Liquid
(iii) Gas

Any comments :

Signature

REAL TEACHING LESSONS

INDEX

Teaching Subject..... Physical Science .....

Lesson No.	Topic
1.	Types of Force
2.	Laws of Motion
3.	Gravitation
4.	Sound
5.	States of Matter
6.	Work & Energy
7.	Water Cycle.
8.	Changes of Matter
9.	Pressure
10.	Electricity
11.	Combustion
12.	Mixture.

Teacher's Signature

Lesson Plan - 1.

P.T. Name - Sapna Class - 8th
P.T. Roll No. - 07. Date - 3-10-16.
Subject - Physical Science Duration - 36 min.
Topic - Types of forces. Av. Age of students - 13 yrs.

INSTRUCTIONAL OBJECTIVES

After going through the lesson, the students will be able to →.

- Recall the types of force.
- Recognize the contact and non-contact force from the given examples.
- Classify the types of forces.
- Give examples of different forces.
- Generalize the utilisation of different forces.
- Evaluate which force has more magnitude & which has less?
- Synthesis the example of contact and non-contact forces.

INSTRUCTIONAL AIDS

General : Chalk, duster, Blackboard, pointer etc.

Specific : Ball, piece of magnet.

PREVIOUS KNOWLEDGE ASSUMED

Pupil teacher assume

The student must know the fundamental concept of force and its types.

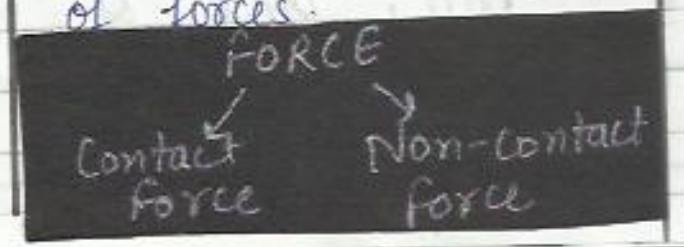
PREVIOUS KNOWLEDGE TESTING

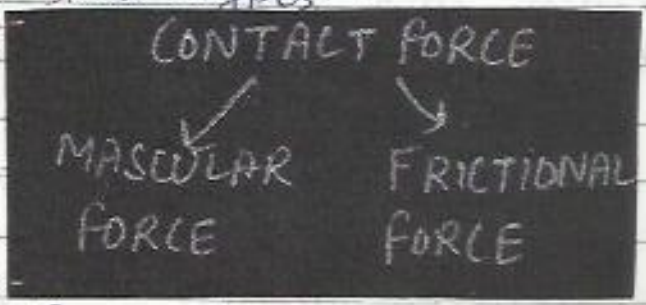
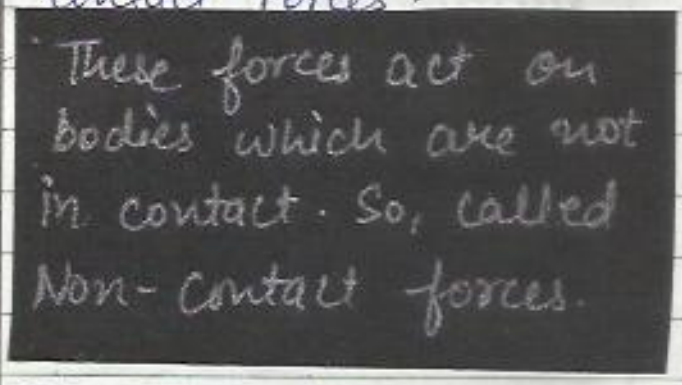
Pupil Teacher's Activity	Student's Activity
→ How can we move a stationary object or stop a moving object.	By pulling or pushing.
→ What is this push or pull called?	It is called force.
→ What is the direction of force?	The direction in which the force is applied.
→ What are the different types of forces?	No Response.

ANNOUNCEMENT OF THE TOPIC

Well students, today we will discuss about the different types of force based on contact.

Presentation →

Teaching Point	Pupil Teacher's Activity	Student's Activity
Types of force.	There are two type of forces. 	listening carefully and noting down in notebook.

Teaching Point	Pupil Teacher's Activity	Student's Activity
Definition of contact force and its types.	Some forces act on bodies only when they are in contact with the body e.g. Pulling your school bag when one pushes another. So, contact force is further categorised into two types.  	Students are listening carefully
Definition of non-contact force.	Some forces can act on a body that are not in contact. This types of force are called Non-contact forces.  	Students are listening as well as noting down in notebook carefully.
Types of Non-contact forces.	Two types of Non-contact force → (i) Gravitational (ii) Magnetic force.	Students are noting in notebook.

Teaching Point	Pupil Teacher's Activity	Student's A
	Non-Contact force ↙ ↘ Gravitational force / Magnetic force	
Example (Gravitational force)	When we throw a ball upwards, it automatically gets back towards the earth because of gravity. In some way the gravitational force is the force of attraction between particles of matters.	Students thinking the reaso but not responding
Magnetic Force	It is the force exerted by a maghet on certain metal such as iron.	Students taking int
	Magnetic force - It is exerted by a magnet on certain metals such as iron.	

RECAPITULATION -

- How many types of forces are there?
- which force is used to pull a cart?
- which force is used to pick out scrap of iron from garbage?

HOME ASSIGNMENT -

- Differentiate between contact and non-contact forces.

Any Comments :

P.K. Testing was done
Lesson was well planned and presented.

Supervisor Signature

Lesson Plan-2.

P.T. Name - Sapna Class - 8th.
P.T. Roll No.-07. Date - 03-10-16
Subject - Ph. Science Duration - 36 min.
Topic - Laws of Motion. Av. Age of Students - 13yr.

INSTRUCTIONAL OBJECTIVES

After going through the lesson students will be able to →

:→ Recall about the motion and laws of Motion.
:→ Recognise the different laws of Motion.
:→ Write the example of laws of Motion.
:→ Write the mathematical expressions for different - law of motion.
:→ Calculate the various value of Motion and force on the object.

INSTRUCTIONAL AIDS

General : Chalk, chalkboard, dustee, pointer etc

Specific : Two wooden box, spring

PREVIOUS KNOWLEDGE ASSUMED

Pupil teacher assumes that students must know about fundamental concept of force.

PREVIOUS KNOWLEDGE TESTING

Pupil Teacher's Activity	Student's Activity
→ Students, do you know what is force.	Any push or pull that tend to move an object is force.
→ Can anyone tell what is SI unit of force?	Ma'm it is Newton
→ Can you tell me what do you mean by motion?	No Response.

ANNOUNCEMENT OF THE TOPIC

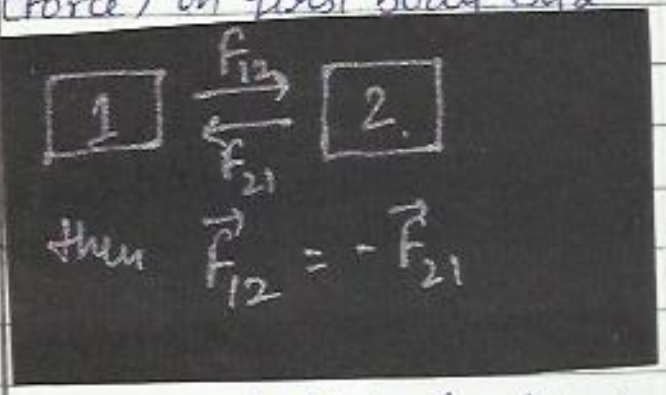
Well students today we will study about the concept of motion and laws of Motion.

Presentation →

Teaching Point	Pupil Teacher's Activity	Student's Activity
Motion Definition	Students, Can anyone tell me about the definition of motion? Yes, Diksha u tell me.	Diksha answered. Ma'm motion is the change in position of an object from one.

Teaching Point	Pupil Teacher's Activity	Student's Activity
	Very good., Sit down.	place to another place.
Laws of Motion.	A scientist Newton studied Galileo idea on force and Motion and presented three laws of Motion called as Newton's laws of Motion.	Students are listening carefully.
First law of Motion.	first law of Motion → An object remains in a state of rest or uniform motion in a straight line unless a force is applied on it. This law is also called law of Inertia.	Students are trying to understand and noting down in their notebook.
Mathematical Expression	first law of Motion - $f = ma$ where m = mass If $f = 0 \Rightarrow a = 0$ $\Rightarrow v$ = constant or zero. Hence Proved	

Teaching Point	Pupil Teacher's Activity	Student's Activity
Second law of Motion	The second law of force states that Rate of change of momentum of an object is proportional to the applied force	Students are listening carefully and noting down in their notebook.
Mathematical Expression	Second law of Motion $\frac{dp}{dt} \propto f$ as $p = mv$, $f = ma$. $\frac{dp}{dt} = \frac{d(mv)}{dt} = m\frac{dv}{dt} =$ $ma = f$ Hence Proved	Students looking curiously how to prove the second law of motion.
Numerical Problem.	What is force required to accelerate a body of Mass 2 kg by $5ms^{-2}$. Yes it's correct, Very Good	$M = 2kg$ $a = 5m/s^2$. $F = Ma$ $= 2 \times 5 = 10N$.
Third law of Motion	Third law of Motion states that Every action has equal and opposite Reaction i.e. force applied by one body on another is equal to the Reaction of	Students are listening carefully and noting down in their notebook.

Teaching Point	Pupil Teacher's Activity	Student's Activity
	(force) on first body by 2nd. 	Listening carefully
Example	(i) When a bullet is fired then the gun get recoiled (ii) When a diver jump from boat forward then boat moves backward.	Students are trying to apply the third law to the given examples & look satisfied

RECAPITULATION -

- Define Motion ?
- Name the scientist who gave laws of Motion ?
- State with examples the three laws of moti

HOME ASSIGNMENT -

- Do Numericals based on Newton's laws of Motio

Any Comment

Supervisor Signature

Lesson Plan - 3.

P.T. Name - Sapna	Class - 9th
P.T. Roll No. - 07	Date - 4-10-16.
Subject - Ph. Science	Duration - 35-40min.
Topic - Gravitation.	Av. Age of Students - 14+

INSTRUCTIONAL OBJECTIVES -

After going through the lesson, the students will be able to -

→ Recall the definition of Gravitation.
→ Recognise the different laws of motion.
→ Calculate the force of Gravitation between two objects.
→ Calculate the value of acceleration due to Gravity
→ Explain How moon can revolve around the earth.

INSTRUCTIONAL AIDS

General : Chalk, Chalkboard, Pointer, duster etc.

Specific : Scale, two wooden blocks, chart.

PREVIOUS KNOWLEDGE ASSUMED

Pupil teacher assumes that student must know about the fundamental concept of force.

PREVIOUS KNOWLEDGE TESTING

Pupil Teacher's Activity	Student's Activity
→ Do you know what is force?	Yes Ma'm any pull or push which tends to mov the body.
→ Students, when an apple is fallen from tree, where it goes?	To earth.
→ Can anyone tell what is reason behind this?	No Response.

ANNOUNCEMENT OF THE TOPIC

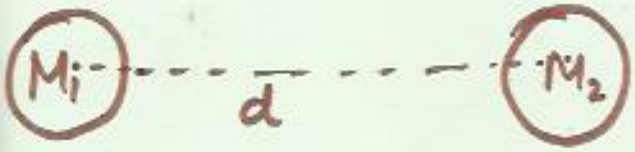
Well studen

today we will study about the concept of Gravitational force and concept of Grav

Presentation →

Teaching Point	Pupil Teacher's Activity	Student's Activity
The idea of Grav. force.	When Newton (scientist) sat below a apple tree. He saw that an apple fall from tree itself! After it he though the reason	Students are listening carefu and trying to understand.

Teaching Point	Pupil Teacher's Activity	Student's Activity
	and gave Many theories on it.	
Gravitational Force.	Every object in the Universe attracts every other object with a force which is proportional to product of inversely square of them. The e is along the two sheion →	Students are listening carefully and noting down in notebook.
Expression	M_1 = Mass of big body M_2 = Mass of small body $F \propto \frac{1}{d^2}$, $F \propto M_1 M_2$ $F \propto \frac{M_1 M_2}{d^2} \Rightarrow F = G\frac{M_1 M_2}{d^2}$ where G = Grav. Constant	Students are noting down the expression in notebook.
S.I unit & value of G	S.I unit of G is $Nm^2 kg^{-2}$ $G = 6.673 \times 10^{-11} Nm^2 kg^{-2}$.	Noting Down in notebook carefully



Gravitational force (F)

$F = \frac{G M_1 M_2}{d^2}$ G = Gravitational Constant

Teaching Point	Pupil Teacher's Activity	Student's Activity
Numerical	The mass of earth is 6×10^{24} kg and that of moon is 7.4×10^{22} kg. If the distance b/w the earth & moon is 3.84×10^{5} km. Calculate the force exerted by earth on moon, using $G = 6.67\times10^{-11}\ Nm^2kg^{-2}$	The Mass of ea $M_1 = 6\times10^{24}$ K $m_2 = 7.4\times10^{22}$ $d = 3.85\times10^{8}$ $G = 6.67\times10^{-11}$ N As we know, $F = \frac{GMm}{d^2}$ $= 2.01\times10^{20}$ N
	Given → $M_1 = 6\times10^{24}$ kg $M_2 = 7.4\times10^{22}$ kg $d = 3.85\times10^{8}$ m $G = 6.67\times10^{-11}\ Nm^2kg^{-2}$ Final Force = ?	
	Yes, Students this is correct	
Importance of Universal law of Motion./ Application	Importance → Gravitation is (i) The force that binds us to earth. (ii) The motion of the moon around the earth. (iii) The motion of planets around sun. (iv) The tides of ocean, sea are due to this force by sun & moon.	Students are listening carefully and trying to apply the concept of Gravitational force to these applications.

Teaching Point	Pupil Teacher's Activity	Student's Activity
Acceleration due to Gravity	As we know that $f = ma$ Force by which earth attracts any body of mass m is → $f = mg$ where $g = \frac{GM}{d^2}$ So, g is acceleration due to Gravity.	Students are trying to understand the concept
FORMULA	$g = \frac{GM}{d^2}$	
NUMERICAL	Find out the value of gravity (acceleration due to Gravity) for earth? As you all know that $G = 6.67 \times 10^{-11}\ N m^2 kg^{-2}$ $M = 6 \times 10^{24}$ kg $R = 6.4 \times 10^6$ m. (R = Radius of Earth) Yes, very good students that is right answer.	$G = 6.67 \times 10^{-11} N m^2 kg^{-2}$ $M = 6 \times 10^{24}$ kg $R = 6.4 \times 10^6$ m. As we know, $g = \frac{GM}{R^2}$ $= 9.8\ ms^{-2}$ Thus, acceleration due to gravity of earth is $9.8\ ms^{-2}$

RECAPITULATION-

- What do you mean by Gravitational force?
- Explain the law of Universal Gravitational?
- What is the S.I. unit of Gravitational & Gravitational force?

HOME ASSIGNMENT-

- What would be effect on Gravitational force if Mass of the two bodies is halfed and distance b/w them is doubled?

- Write the factors on which acceleration due to gravity depends?

Any Comment:

* B.B. writing was effective
* Pt. Tr. was confident and voice was audible.

Supervisor Signature

Lesson Plan-4.

P.T. Name - Sapna	Class - 9th
P.T. Roll No.- 07.	Date - 4-10-16.
Subject - Physical Science	Duration- 35-40min.
Topic - Sound	Av. Age of Students - 14 yrs

INSTRUCTIONAL OBJECTIVES

After going through the lesson, the students will be able to →

- Recall the definition of sound.
- Recognise the way in which sound is produced.
- Student will be able to understand the characteristics of sound.
- Student will be able to use the different characteristic (expression) to find frequency, velocity and wavelength of sound.
- To draw the diagram showing propagation of sound wave.

INSTRUCTIONAL AIDS

General: Chalk, board, duster, pointer etc.

Specific: String, Hollow cylinder, a rod.

PREVIOUS KNOWLEDGE ASSUMED

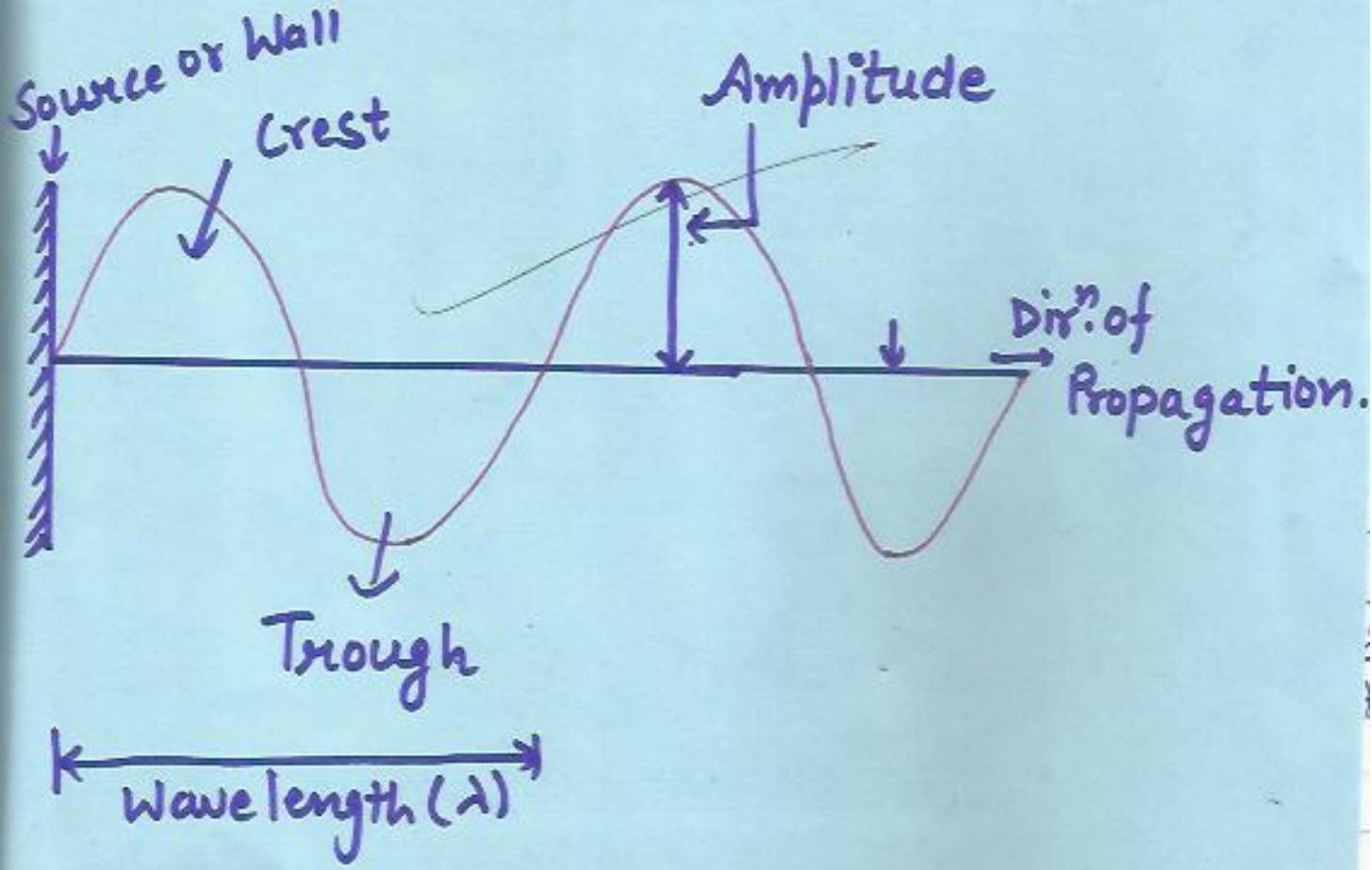
Pupil Teacher assumes that student must know about the vibration produced when sound is produced.

PREVIOUS KNOWLEDGE TESTING

Pupil Teacher's Activity	Student's Activity
→ What do you get, when my phone is ringing?	Ma'm sound with vibration is produced.
→ When any instrument is sung loudly then what our ears feels?	Our ear feels large vibration.
→ What did you conclude from it?	All vibrating bodies produce sound.
→ My dear students, can you tell the properties of sound?	No Response

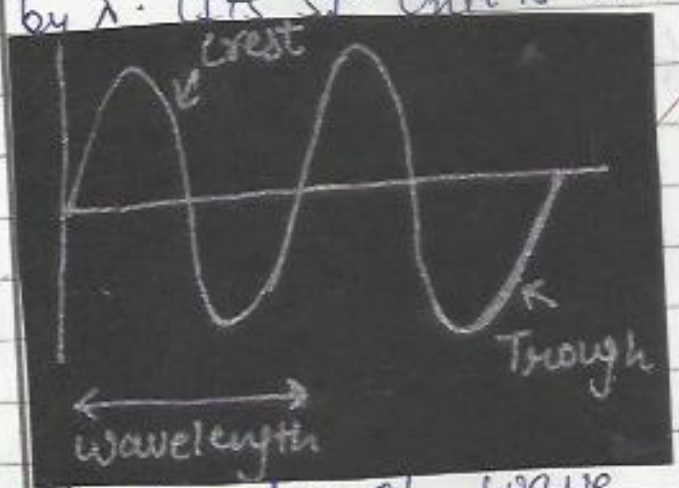
ANNOUNCEMENT OF the TOPIC

Well students, today we will study about the concept of sound and its various characteristic and relation between them.


Source or Wall
Crest
Amplitude
Dir^n of
Propagation.
Trough
Wavelength (λ)

Presentation →.

Teaching Point	Pupil Teacher's Activity	Student's Activity
Definition of sound.	Sound → Sound is the form of energy produced due to vibration and it gives us sensation to hear.	Students are listening carefully and noting down in notebook.
Example →	The various examples of Sound are →. • Sound and vibration produced by Guitar, Harmonium and other Musical Instruments.	Students are also trying to get some examples but unable to get.
Nature of Wave	Sound is a longitudinal waves and it always needs a medium to travell and it can't travell in vacuum.	Students are listening carefully and noting down in their notebook.
Characteri-stics of Sound.	The different characteri-stics of sound are → (i) Frequency (ii) Amplitude (iii) Speed	

Teaching Point	Pupil Teacher's Activity	Student's Activity
	Students, as the wave is longitudinal. So, it contains/consists of crest and trough. as shown in fig.	Students are watching the picture.
	Crest → Crest is the upper portion of wave. Trough → It is the lower portion of wave.	
Wavelength	Wavelength is the distance between two consecutive crest or trough represented by λ. (Its SI unit is m).	Students are watching carefully and noting down in notebook.
		
Frequency	The number of wave passing through a point in 1 s. are called frequency denoted by f. Its units are Hertz.	Students noting down their note

Teaching Point	Pupil Teacher's Activity	Student's Activity
	S.I. unit of frequency is Hertz (Hz)	
	Frequency is the Reciprocal of Time Period.	Students are trying to understand.
Mathematical Expression	$f = \frac{1}{T}$	
	T = Time Period of Wave. This is Relation between frequency and Time Period.	
Relation between velocity, Frequency and wave length.	The Relation between velocity(v) frequency (f) and wavelength (λ) is →	Students are watching carefully and noting down in their notebook.
	$v = \lambda f$ v → velocity λ → wavelength f → frequency	
Numerical	A sound wave has a frequency of 2kHz and wavelength 35 cm. How long will it take to	$f = 2\,kHz$ $= 2000\,Hz$ $\lambda = 35cm = 0.35m$ $v = f\lambda$

Teaching Point	Pupil Teacher's Activity	student's Activity
	travell 1.5 km.	$V = 2000 \times \frac{35}{100}$
	Students there $f = 2000 Hz$ $V = ?$ $\lambda = 35/100 = 0.35 m$ find velocity & Time.	$= 700 m/s.$ Time = $\frac{\text{Distance}}{\text{speed}}$ $= \frac{1500}{700} = \frac{15}{7} s$
	Correct, very good.	

RECAPITULATION-

- Define Sound?
- Write definition of frequency and wavelength?
- Discuss various characteristics of Sound.
- Write Relation b/w velocity, frequency and wavelength.

HOME ASSIGNMENT -

- Do numericals on the basis of above Relation.
- learn the definition of sound, frequency and wavelength.

Any Comment:

Supervisor Signature

Lesson Plan- 5.

P.T. Name - Sapna Class - 8th
P.T. Roll No. - 07. Date - 05-10-16.
Subject - Ph. Science Duration - 35-40min.
Topic - State of Matter. Av. Age of Students - 13yr

INSTRUCTIONAL OBJECTIVES

After going through the lesson, students will be able to →.

- → Recall the definition of matter?
- → Recognise the three states of matter?
- → Students will explain how a matter change its state.
- → Apply the change of state method in their Daily life.
- → Student will be able to explain the Latent heat and fusion for changing the state of mat

INSTRUCTIONAL AIDS

General: Chalk, Chalkboard, duster, pointer e

Specific: Ice cube, Heating source, chart.

PREVIOUS KNOWLEDGE ASSUMED

Pupil teacher assumes that student must know about

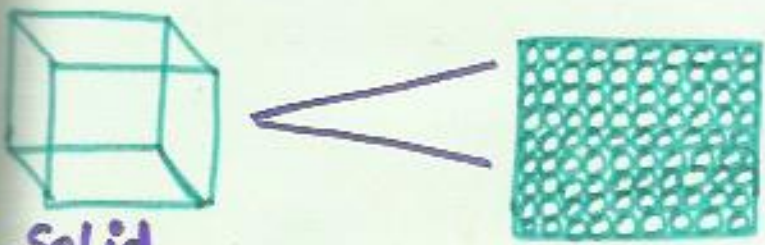
the fundamental concept of matter.

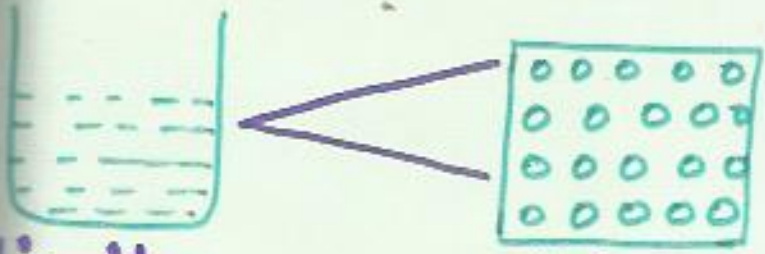
PREVIOUS KNOWLEDGE TESTING -

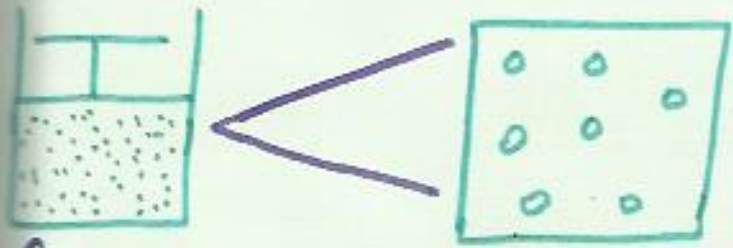
Pupil Teacher's Activity	Student's Activity
→ Showing Ice cube, chalk do you know students what are these.	Ma'M these are matter.
→ Do you know about their state.	Yes, Ma'M it is solid.
→ Do you know the other states of matter?	Yes, Ma'M there are three states of matter → (i) Solid (ii) Liquid (iii) Gas
→ Can anyone tell what is change in state of matter.	No Response.

ANNOUNCEMENT OF the TOPIC -

Well students today we will study about the various change in state of matter.







a, b, c are arrangement of Particle of three states.

Presentation

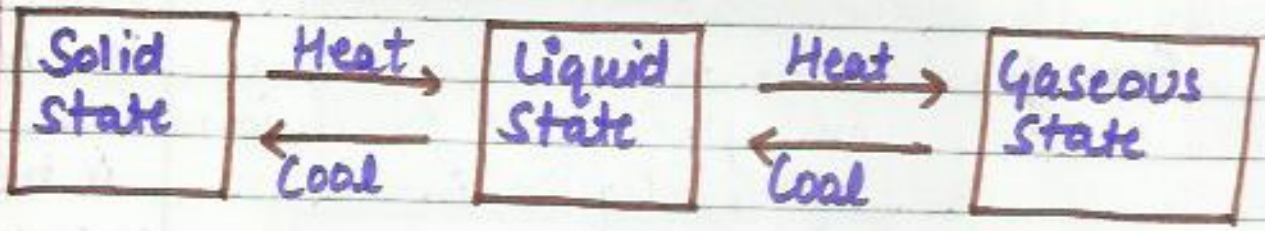
Teaching Point	Pupil Teacher's Activity	Student's Activity
States of Matter	As you all know student, There are three states of matter→ (i) Solid (ii) Liquid (iii) Gas	Listening Carefully.
Change of solid in Liquid	Change of Solid in to Liquid, when the temparature of solids is increased, K.E. of particle increases. Due to increase in K.E., the particles start vibrating with greater speed. The force of attraction between particle becomes less and they started moving freely and a stage come when the solid melt in to liquid. Solid ⇌ (Heat / Cool) Liquid	Students are listening carefully and noting down in notebook. Students draw the picture in notebook.
Fusion	This process is also called liquification / melting. or fusion.	

Teaching Point	Pupil Teacher's Activity	Student's Activity
Example	Give any example of change of solid in liquid.	Melting of ice and becomes water on heating.
Melting Point	Melting Point is the Temperature at which solid converts in to liquid at atmospheric pressure.	Students are noting down the topic in notebook
Melting pt. of ice.	What is melting point of ice?	The melting point of ice is 273.15 K.
Latent heat of fusion	Latent Heat of fusion → Amount of heat gained by solid to change in liquid at Melting Point is called Latent Heat	Students are noting down the definition in notebook.
Boiling Point	Boiling Point → The temp. at which the liquid starts boiling and converts in to vapours at atm.	

Teaching Point	Pupil Teacher's Activity	Student's Activity
	pressure is called boiling point.	
Vapourisation	The change of liquid in to vapours or Gas State is called vapourisation.	
Example	Students can you give example for conversion of a liquid in to vapours.	Yes, Ma'M when wate is boiled uncovered it change in vapours.
	Liquid $\underset{\text{Cool}}{\overset{\text{Heat}}{\rightleftharpoons}}$ Gas	
	Yes, very good.	
	This process is also called evaporation.	
Factors Affecting the Evaporation	Factors affecting the Evaporation (i) Surface Area (ii) Temparature (iii) Evaporation increases with decrease in humidity (iv) Evaporation increases with increase in wind speed.	Students listening carefully a trying to understa

RECAPITULATION -

- What do you mean by matter?
- Discuss the states of matter in brief?
- Define fusion and latent heat of fusion?
- What is essential property for changing the state of matter. Discuss in brief.



HOME ASSIGNMENT -

- How the change of temparature affect the state of matter. Discuss in brief.

Any Comment:

Supervisor Signature

Lesson Plan - 6.

P.T. Name - Sapna	Class - 9th
P.T. Roll No. - 07.	Date - 06-10-16.
Subject - Ph. Science	Duration - 35-40 min
Topic - Work & Energy	Av. Age of students - 14

INSTRUCTIONAL OBJECTIVES

After going through the lesson, the students will be able to →

→ Recall the definition of Work and Energy.
→ Recognise the types of Energy.
→ Give Examples of Work done.
→ Calculate the value of Work done and Energy
→ Students will be able to calculate the value of power in doing work.

INSTRUCTIONAL AIDS

General : Chalk, Chalkboard, duster, pointer etc

Specific : Chart, Wooden block, wire and a small solid object.

PREVIOUS KNOWLEDGE ASSUMED

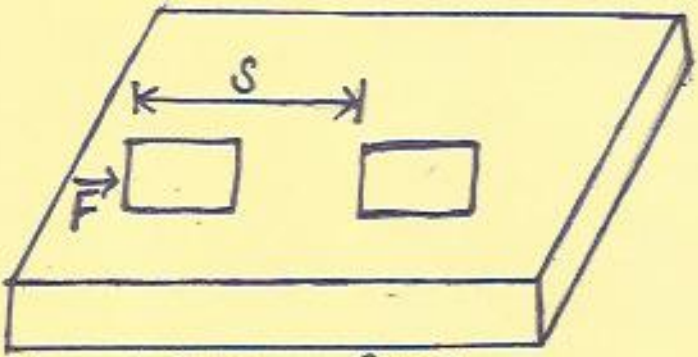
Pupil-Teacher assumes that the students must know about the fundamental concept of force and displacement.

PREVIOUS KNOWLEDGE TESTING

Pupil Teacher's Activity	Student's Activity
→ Students, what do you mean by force?	Ma'M Push or pull that tends to move object on which it is applied.
→ If I move a box from point A to Point B what I am doing?	Ma'M a force is applied on it by you and you do some work.
→ Can you define Work?	No Response.

ANNOUNCEMENT OF THE TOPIC

Well students today we will study about the concept of Work and Energy and Power required to do work.



Work (W) = F X S

Teaching Point	Pupil Teacher's Activity	Student's Activity
Work	Work → If a force applied on a body displaces the body from its original position then a work is said to be done.	Students are listening carefully and noting down in their notebook.
..	Work = force × Displace. = F × S F = force, S = displace.	
S.I. Unit	S.I. unit of work is Joule denoted by J.	
Numerical	A force is 5N is acting on an object. The object is displaced through 2m in the direction of force. Calculate the work done? Yes, it is correct.	F = 5N S = 2m Work = F × S W = 5 × 2 = 10 J.
Energy	Energy → The capacity to do work is called Energy.	Students are noting down in their notebook.

Teaching Point	Pupil Teacher's Activity	Student's Activity
	Energy is capacity of doing work. Its SI Unit is Joule.	
Types of Energy	Types of Energy → The various types of Energy are → Potential Energy kinetic Energy Heat Energy Chemical Energy Electrical Energy and Light Energy Nuclear Energy	Students are listening careful as well as noting down in their notebook.
Kinetic Energy	Kinetic Energy → The energy possessed by a body due to its motion is called kinetic Energy.	Students are trying to understand and writing.
Mathematical Expression	Kinetic Energy → $E = \frac{1}{2} mv^2$ Where m = Mass V = velocity of body	

Teaching Point	Pupil Teacher's Activity	Student's Activity.
Numerical	An object of mass 15 kg is moving with a uniform velocity of 4 m/s. What is kinetic energy of object?	M = 15 kg V = 4 m/s. K.E. = $\frac{1}{2}mv^2$ = $\frac{1}{2} \times 15 \times (4)^2$ = $\frac{1}{2} \times 15 \times 16^8 = 120J$
	Yes, it is Correct.	
Potential Energy	Potential Energy → Potential Energy is the energy possessed by an object due to its position.	Students are listening & noting carefully.
Mathematical Expression	The Potential Energy of an object is → $E = mgh$ m = Mass of object h = height g = Acc. due to Gravity	
Numerical	Find the Potential Energy possessed by an object of mass 10 kg when it is at a height of 6m. g = 9.8 m/s².	M = 10 kg g = 9.8 m/s². h = 6 m P = mgh P = 10 × 9.8 × 6 = 588 J

Teaching Point	Pupil Teacher's Activity	Student's Activity
	Yes, it is correct Very good.	
Power	Power → The rate of doing work is called Power.	Students are listening carefully and noting down in their notebook.
	$\text{Power} = \frac{mgh}{t}$ t = time Unit of Power is watt.	

RECAPITULATION -

- Define Work? Write down its mathematical expression
- Define Energy and its types?
- What do you understand by Power?

HOME ASSIGNMENT -

- Discuss how we can calculate the work done?
- Discuss how we can calculate the K.E. & P.E.?
- Write the various units of Power?

Any Comment:

Supervisor Signature

Lesson Plan - 7.

P.T. Name - Sapna	Class - 8th
P.T. Roll No. - 07.	Date - 06-10-16.
Subject - Ph. Science	Duration - 35-40min
Topic - The Water Cycle.	Av. Age of students - 13yr

INSTRUCTIONAL OBJECTIVES

After going through the lesson, the students will be able to →

- → Recall the water cycle.
- → Explain the water cycle.
- → Recognise how water is being circulated in air and comes back on earth.
- → Reason out how clouds are formed?
- → Synthesise the relationship between water loss and water gain.

INSTRUCTIONAL AIDS

General : chalk, duster, blackboard, pointer
Specific : chart showing diagram of water cy

PREVIOUS KNOWLEDGE ASSUMED

Pupil Teacher assumes students must know about the different sources of water.

PREVIOUS KNOWLEDGE TESTING.

Pupil Teacher's Activity	Student's Activity
- Students, from where do we get water?	Oceans, sea, river etc.
- Other than human beings, who use water?	Plants, Animals and Birds etc.
- What do human beings needs to survive?	Food, Air, water.
- How is water balanced on earth?	No Response.

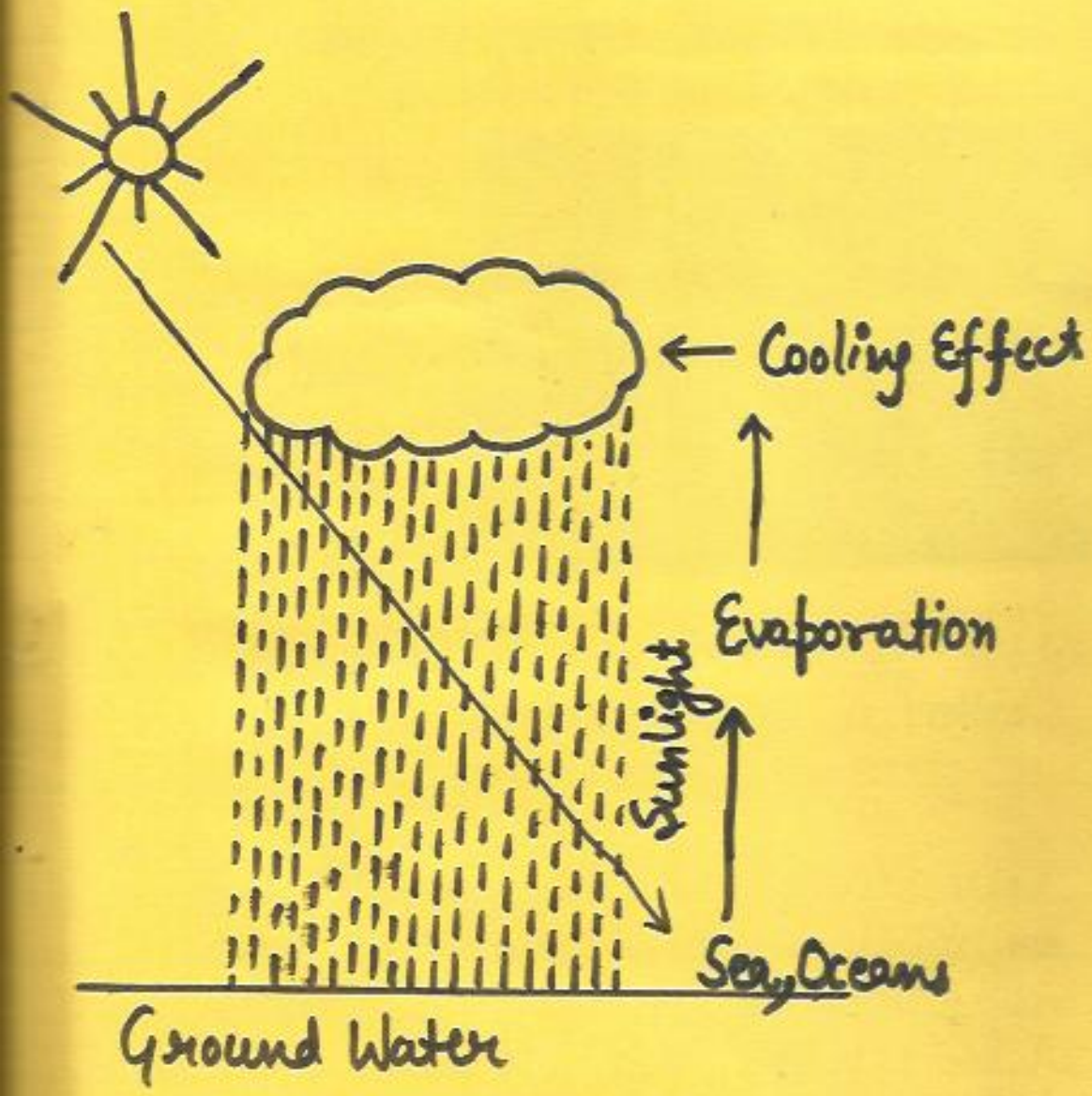
ANNOUNCEMENT OF the TOPIC

Well students! Today we will discuss about water cycle and will study different processes included in it.

Presentation →

Teaching Point	Pupil Teacher's Activity	Student's Activity
Introduction	Many a times, you have seen that water spilled on the floor seems to disappear after sometime.	Students are responding by moving their

WATER CYCLE


← Cooling Effect
Evaporation
Sunlight
Sea, Oceans
Ground Water

Teaching Point	Pupil Teacher's Activity	Student's Activity
	Where does water go? The water evaporates but the salt it carries left behind. On heating, water changes in vapours which can not be seen.	Students are noting down.
	During day, Sunlight falls on water in ocean, river & lakes after heating it changes in to vapour. 	
Evaporation	This conversion of water in to vapours is called evaporation.	Students are listening carefully.
Loss of water by plants.	We all know, plants need water to grow. Plants use water to prepare their food and retain some in different parts. Remaining water in their parts are released by the plant in air through transpiration.	Understanding carefully.

Teaching Point	Pupil Teacher's Activity	Student's Activity
How are clouds formed.	Lets take a glass of water and fill it with ice wipe outer part of glass with a cloth. Wait for 2 minutes and observe. You will see water droplets outside the glass, this is due to condensation. Process of condensation plays an important role in bringing water back to surface of earth.	Students are taking interest and looking satisfied with example.
	Process of Condensation plays an important role in bringing water back to surface of earth.	
	As we go higher air becomes cooler. This cooler air condenses water to form tiny	

Teaching Point	Pupil Teacher's Activity	Student's activity
	droplets, which forms clouds.	
	As we go higher air becomes cooler. This cooler air condenses water to form tiny droplets, which form clouds.	
	It is so that many droplets ~~of~~ water come together to form large size of water droplets. Some drops of water becomes so heavy that they fall off. These falling droplets are called Rain. This cycle goes on again continuously.	

RECAPITULATION -

→ The process of changing of water in to water vapours is called _____.

→ Write the name of process involved in →

(a) Steam arising from wet clothes when ironed. _____

(b) Blackboard dries up after wiping. _____

(c) Fog appearing in cold winter morning. _____

HOME ASSIGNMENT -

Q. What do you mean by water cycle? Explain it with the help of a well-labelled Diagram.

Any Comment:

Learn to live

_____

Supervisor Signature

Lesson Plan - 8.

P.T. Name - Sapna	Class - 8th
P.T. Roll No. - 07.	Date - 07-10-16.
Subject - Ph. Science	Duration - 35-40 min.
Topic - Change of Matter	Av. Age of Student - 13yr.

INSTRUCTIONAL OBJECTIVES

After going through the lesson, the students will be able to →

→ Recall the definition of changing the matter from one form to another form.
→ Recognise the type of change.
→ Use the right example of changing state and changing form.
→ To change the state of matter from one form to another form.

INSTRUCTIONAL AIDS

General : Chalk, Chalkboard, pointer, Duster etc.

Specific : Heating source, burner, ice, tripod stand, wire gauge etc.

PREVIOUS KNOWLEDGE ASSUMED

Pupil Teacher assumes student must be awabe of different

of matter and different forms.

PREVIOUS KNOWLEDGE TESTING

pupil Teacher's Activity	Student's Activity.
• Students, can anyone tell what are different States of matter?	Yes, Ma'M the different States are → Solid, Liquid, Gas.
Give example of Solid?	Ice, Iron etc.
Give examples of Liquid and Gas?	Liquid → water, alcohol etc. Gas → Oxygen, CO_2 etc.
Can one state change to another state?	Yes. No Response.

ANNOUNCEMENT OF the TOPIC

Well, Students. today we will study about the change of matter from one form to another form and one state to another state.

Presentation →

Teaching Point	Pupil Teacher's Activity	Student's Activity
→ Reversible change	Reversible change is the change which can be	Students are listening carefully.

Teaching Point	Pupil Teacher's Activity	Student's Activity
	reversed with the same probability. e.g.	Students are noting down in their notebook.
→ Example	water $\xrightarrow{\text{Heat}}$ Vapours Vapours $\xrightarrow{\text{Cool}}$ water Thus, water $\underset{\text{Cool}}{\overset{\text{Heat}}{\rightleftharpoons}}$ Vapours	
	Can you tell another exa of same?	Yes Ma'm. Stretching of Rubber.
	Yes, very good.	
→ Irreversible change	The change can not be reversed even by changing the condition are called irreversible change.	Students are listening carefully & noting down in their notebook.
→ Example	Example of Irreversible change is e.g. → Burning of Paper.	
	Can you give another example? (Clapping the hand), Very good.	Ma'm change of milk in to curd

Teaching Point	Pupil Teacher's Activity	Student's Activity
→ Physical change.	Physical change → The change in which only the physical properties like (state) changes and no other change occurs i.e. no new substance is formed are called physical change.	Students are listening carefully and try to collect some examples
→ Question →	Why the change of solid in to liquid and liquid in to gas can be considered as physical change.	Ma'M, when a solid is heated it gets changed in to liquid and when liquid is heated it change to gas. Here, no substance is formed. So, it is a physical change.
	Good, It's Right students.	
→ Chemical change	Chemical change → A change in which composition and chemical	Students are listening carefully and noting down in notebook.

Teaching Point	Pupil Teacher's Activity	Student's Activity
	properties of substance get changed are called chemical change.	
→ Example.	 Burning of a candle is chemical change.	Students are trying to understand.

RECAPITULATION -

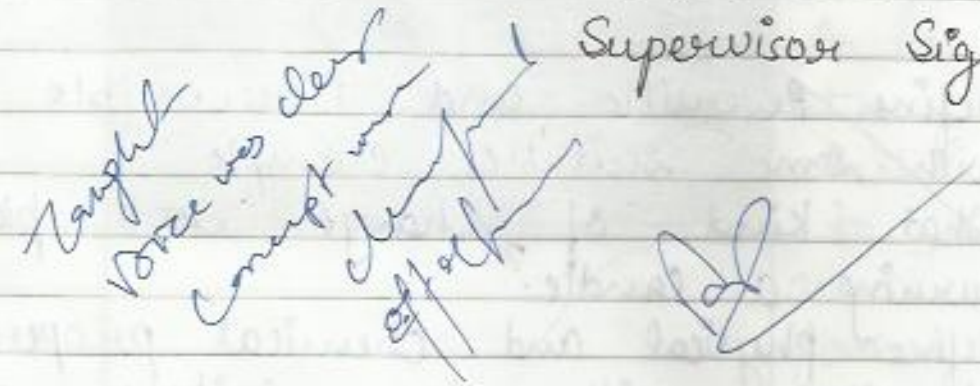
- Define Reversible and irreversible change with some suitable example?
- What kind of change took place in burning a candle?
- Define physical and chemical properties / change of state with some suitable example?
- Why, Rusting of Iron is a chemical change?
- Give another example of chemical change?

HOME ASSIGNMENT-

- Explain the reversible and irreversible change briefly with example?
- Explain the physical and chemical change in Brief with examples?
- Differentiate between physical and chemical change?
- Differentiate between Reversible and Irreversible change?

Any Comment:

Supervisor Signature



Lesson Plan - 9.

P.T. Name - Sapna	Class - 8th
P.T. Roll No. - 07.	Date - 07-10-16.
Subject - Physical Science	Duration - 35-40 min.
Topic - Pressure.	Period - 4th.

INSTRUCTIONAL OBJECTIVES

After going through lesson, the students will be able to →

- → Recall the definition of Pressure.
- → Recognise the different example for pressure exerted.
- → Explain the pressure exerted by liquid and gases.?
- → Use the concept of pressure by gases to explain the atmospheric pressure.

INSTRUCTIONAL AIDS

General : Chalk, chalkboard, pointer, duster etc.

Specific : Chart showing tables for Pressure exerted by liquid and gas.

PREVIOUS KNOWLEDGE ASSUMED

Pupil Teacher assumes that the students must know the

fundamental concept of force and area.

PREVIOUS KNOWLEDGE TESTING

Pupil Teacher's Activity	Student's Activity
→ Can you define force?	Force is a push or pull exerted by person which tends to change the position of object.
→ Do the area on which force is exerted effect the impact of force?	Yes Ma'M. If area is less the impact is more.
→ Do you know what is force per unit area is called.	No Response.

ANNOUNCEMENT OF THE TOPIC

Well students!
Today we will discuss about the concept of pressure and its effect.

Presentation →

Teaching Point	Pupil Teacher's Activity	Student's Activity
→ Pressure Definition	Pressure → Force per unit area is called pressure. **Force per unit area is called pressure.**	Students are listening carefully and noting down in notebook.
Activity	Take a hammer and a nail and try to push the pointed area in bench by beating on head. It moves easily. But if we push the head by beating on point side it is not possible.	Students are taking interest and watching curiously and understand the idea.
	Can you tell me why this happens? **Thus, we can say that as area decrease then pressure increases** Thus, **Pressure = Force / Area**	Yes Ma'M become area of head is more. So, pressure less and area of point is less. So, area decreases thus pressure increases.

Teaching Point	Pupil Teacher's Activity	Student's Activity
Interpretation with formula.	As Pressure = $\frac{\text{force}}{\text{Area}}$ As area is below. So, when area is larger then pressure decreases and when area is smaller then pressure increases.	Students are listening carefully and noting down in their notebook.
Pressure exerted by liquids & Gases.	Every liquid and gas molecule exert pressure on walls of container. This can be explained as follows by the activity.	
	Take an empty bottle & drill 4 holes all around near the bottom of bottle. What do you observe?	Ma'm the water falls / coming out of holes at the same distance from the bottle.
	Thus, we can say that liquid exerts equal pressure at the same depth.	Students are understanding carefully.

Teaching Point	Pupil Teacher's Activity	Student's Activity
Pressure by Gases.	Gases also exert pressure it can be explained by the example of a ballon.	
	Students, If a ballon has hole in it, can you then inflate the ballon.	No, Ma'm it can not be inflated.
	This also suggests that air exerts pressure on the inner walls of an inflated ballon or a tube.	
	Thus, liquid and gas exerts pressure on the walls of container in which they are filled.	Students are looking satisfied with the explaination.
Atmospheric Pressure	As we know that there is air all around us. This envelop of air is called atmosphere. Thus, Atmospheric pressure is the pressure exerted by this air.	Students are listening carefully and noting down in their notebook.

RECAPITULATION -

→ Explain the concept of pressure along with mathematical formula?

→ If a nail of area 0.1 cm^2 is forced to go inside wooden block with force of 50N. Then find the pressure?

→ How can you explain that pressure is exerted by liquids and gases?

HOME ASSIGNMENT -

→ Define Pressure?

→ Explain why the cutting of vegetable with sharp knife is easier than with blunt knife?

→ Define Atmospheric pressure?

Any comment:

Signature of Supervisor

Lesson Plan- 10.

P.T. Name- Sapna	Class - 9th
P.T. Roll No- 07.	Date - 13-10-16.
Subject - Ph. Science	Duration - 35-40 min
Topic - Electricity	Av. Age of Students- 14 yrs

INSTRUCTIONAL OBJECTIVES

After going through the lesson, the students will be able to →

- → Recall the definition of Electric Component and Electric current.
- → Recognise the symbols of different electric components.
- → Recognise the way of arranging the different electric components to make an electric circuit.
- → Use of the different components correctly.
- → Calculate the total resistance of circuit by their arrangement.

INSTRUCTIONAL AIDS

General : Chalk, Chalkboard, duster, Pointer etc.

Specific : Small wire, Cell, bulb etc.

PREVIOUS KNOWLEDGE ASSUMED

Pupil Teacher assumes that students must know little about electric cell and wire

PREVIOUS KNOWLEDGE TESTING

Pupil Teacher's Activity	Student's Activity
→ Students, (showing a cell) what is this.	Ma'm this is a cell.
→ Can anyone tell where these cells are used?	Remote, watch, Toys, batteries etc.
→ Do you some electric components related to electric device you see?	Bulb, switch, wire etc.
→ Do you know, how these components can be represented by symbols.	No Response.

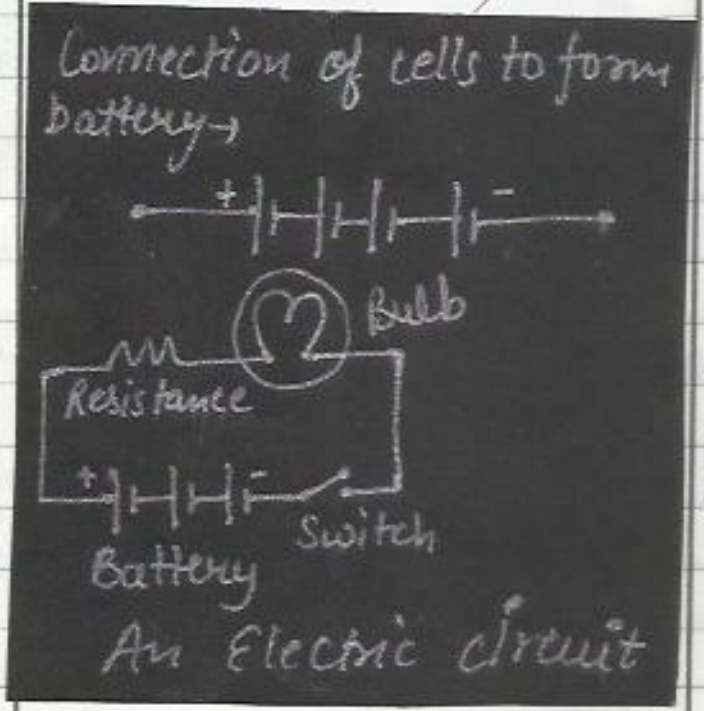
ANNOUNCEMENT OF THE TOPIC

Well students! today we will discuss about the representati

of electric component and about electricity.

Presentation →

Teaching Point	Pupil Teacher's Activity	Student's Activity
→ Electricity	The flow of current from one point to another point is called electricity.	Students are listening carefully and noting down in their notebook.
	Flow of current from one point to another point is called Electricity.	
→ Symbols of Electric Components.	Symbol of electric components →.	Students are noting down carefully from the chalkboard on their notebook.
	Wire Cell Bulb Resistance Switch open Switch closed Battery	
	Here, connection will follow only opposite terminals of two cells are connected.	

Teaching Point	Pupil Teacher's Activity	Student's Activity
→ Connecting cell in the form of battery.	positive terminal of one cell is connected to negative terminal of another cell and negative terminal is connected to positive terminal of another cell to form a battery.	Students are listening carefully and noting in notebook.
	Connection of cells to form battery →  An Electric circuit	Students are making picture in notebook.
→ Showing example of an electric circuit.		Students are watching carefully.
→ Types of connection of cell.	We can connect cell in two ways. 1. Series 2. Parallel	Listening carefully.

Teaching Point	Pupil Teacher's Activity	Student's Activity
Ohm's Law	The flow of charge from one pt. to another point per unit time is called Current.	Students are listening carefully and noting down in notebook.
Potential Difference.	It is the difference of voltage from Point A and Point B. Then, P.D. is represented by V_{AB}.	Students are noting down in notebook.
	Difference of Voltage between two points A and B is called Potential difference.	
Ohm's Law	According to ohm's law→ Current flowing through a wire is directly proportional to Voltage /Potential difference applied.	Students are noting down in their note-book carefully.
	$V \propto I$ $V = RI$ The constant is called Resistance.	

Teaching Point	Pupil Teacher's Activity	Student's Activity
S.I. units of Different Quantities.	The S.I. Unit of P.D. is voltage (V) S.I. unit of Current is Ampere (A) S.I. unit of Resistance is Ohm (Ω)	Students are listening carefully
	Resistance can be connected in circuit in series or parallel.	Students are noting down in notebook.
	Resistance is the hurdles or obstructions in path of flowing current. Voltage per unit current is called Resistance.	Students are listening carefully

RECAPITULATION -

- Name various electric components and show with symbols.
- Show an electric circuit including various components.

- If P.D. of a battery is 6 V having Resistance of 10 Ω. Then, find the current flowing through the wire.

HOME ASSIGNMENT -

- Draw various electric component signal Symbol on a chart paper.
- Draw an electric circuit showing components like bulb, Resistance, switch key, wires, battery etc.

Any Comment?

Lesson was taught effectively with appropriate use of teaching aids

Supervisor Signature

[signature]

Lesson Plan - 11.

P.T. Name - Sapna	Class - 8th
P.T. Roll No. - 07.	Date - 14-10-16.
Subject - Ph. Science	Duration - 35-40m
Topic - Combustion	Period - 4th

INSTRUCTIONAL OBJECTIVES

After going through the lesson, the students will be able to →.

Recall the definition of Combustion.
Recall the definition of flame.
Recognise the different types of Combustion.
Distinguish between different substance on basis of Unflammable and inflammable substances.
Give Examples of Unflammable and Inflammable Substances.
Use this to choose the substances which provide more heat for less amount of fuel.

INSTRUCTIONAL AIDS

General: Chalk, chalkboard, pointer, duster etc.

Specific: Sheet showing different flammable and inflammable substances, one candle and matchstick and match box.

PREVIOUS KNOWLEDGE ASSUMED

Before going through lesson, Pupil Teacher assumes that the Student must know about fuels used in home and Industry.

PREVIOUS KNOWLEDGE TESTING

Pupil Teacher's Activity	Student's Activity.
→ Can you Name a few fuels used in our homes?	Ma'M LPG, Coal etc.
→ Name a few fuels used in Trade and Industry?	Wood, coal, charcoal, petrol, Diesel, CNG etc.
→ Do you know what is difference between burning of a candle and burning of a fuel like coal?	No Response.

ANNOUNCEMENT OF THE TOPIC

Well Students!
Today we will discuss about the Combustion and Flame.

Presentation →

Teaching Point	Pupil Teacher's Activity	Student's Activity
COMBUSTION	A chemical process in which a substance reacts with oxygen to give off heat is called combustion.	Students are listening carefully and noting down in their notebook.
	A chemical process in which a substance reacts with oxygen to give off heat is combustion.	
Combustible substances.	The substances which can undergo combustion is said to be combustible. It is also called fuel. Fuel may be Solid, liquid or Gas.	Noting Down in their notebook.
	Few examples of combustible substances are wood, Paper, Straw, polythene, petrol etc.	
Non-combustible substances.	The substances which can not undergo combustion are called non-combustible substances.	Students are listening carefully.

Teaching Point	Pupil Teacher's Activity	Student's Activity
	few examples of non-combustible substances are Iron, Glass etc.	
Activity	Collect some materials like straw, matchsticks, kerosene oil, paper, iron nails, glass etc. Then try to burn these materials one by one to show the children. If combustion takes place mark the material	Students are looking curiously and taking interest whether the substance will burn or not.
	Out of these substances Combustible → straw, matchsticks, paper, kerosene oil Non-combustible → Iron Nail and Glass.	
Ignition temparecture	The lowest temparecture at which a substance catches fire is called Ignition Temparecture.	Students are listening carefully.

Teaching Point	Pupil Teacher's Activity	Student's Activity
	A combustible substance can not catch fire as long as its temp. is lower that ignition temperature	Students are noting down in notebook.
	Combustible substances have lower ignition temparature	
Example	If Kerosene Oil is heated a little, it will catches fire but if wood is heated a little, it would still not catch fire. It means that Ignition temparature of kerosene oil is less than that of wood.	Students are trying to understand the examples.
	Thus, substances having less ignition temparature burn easily with little Heat.	
Inflammable substances.	The substances which have very low Ignition temparature	

Teaching Point	Pupil Teacher's Activity	Student's Activity
	and can easily catch fire with a flame are called Inflammable substances. e.g. Petrol, Alcohol, LPG etc. Those substances which have very low Ignition Temparature are called Inflammable Subs.	Students are trying to understand.
Types of Combustion	Types of Combustion Combustion Rapid Combustion — Spontaneous Combustion	Students are listening carefully.
Rapid Combustion	Combustion in which substance burn easily to produce heat and light is called Rapid Combustion. for e.g. substances like phosphorus burn in air at room temparature.	Students are watching carefully and noting down.
Spontaneous Combustion	Combustion in which a	

Teaching Point	Pupil Teacher's Activity	Student's Activity
	material suddenly bursts in to flames, without any cause is called Spontaneous combustion. e.g. a cracker.	Students are noting in notebook

RECAPITULATION -

- Define combustion?
- What are different types of combustion?
- Differentiate between combustible and non-combustible substances?

HOME ASSIGNMENT -

- What are Inflammable substances. Write some examples?
- Draw a table to show which materials are combustible and which are not?

Any Comment:

Supervisor Signature

Lesson Plan - 12.

P.T. Name - Sapna	Class - 8th
P.T. Roll No. - 07.	Date - 15-10-16.
Subject - Ph. Science	Duration - 35-36 min.
Topic - Mixture	Period - 4th

INSTRUCTIONAL OBJECTIVES

After going through the lesson, the students will be able to →

- → Recall the definition of mixture.
- → Recognise the type of mixture.
- → Define the terms related to mixture.
- → Understand the concept of concentration of solution.
- → Differentiate between different solutions having same compounds on the basis of their concentration.
- → Use this concept to calculate the concentration of solute and solvent in given solution by using mass formula.

INSTRUCTIONAL AIDS

General: Chalk, chalkboard, duster, pointer etc.

Specific: Solution of Sugar in water.

PREVIOUS KNOWLEDGE ASSUMED

Pupil Teacher assumes that before delivering the lesson, the students must know about fundamental concept of mixture.

PREVIOUS KNOWLEDGE the TESTING

Pupil Teacher's Activity	Student's Activity.
→ What is the matter called in which we mix two types of matter.	It is called mixture.
→ If one of two substances is liquid which is in major amount. Then what is this new substance called?	If one substance in a mixture is liquid then the mixture is called solution.
⇒ Give example of one solution (Solid + Liquid)?	Sugar + water.
→ Which type of solution is sugar + water?	No Response

ANNOUNCEMENT OF TOPIC

Well Students!
Today we will discuss about mixture and its types.

Presentation →

Teaching Point	Pupil Teacher's Activity	Student's Activity
Mixture Definition	Mixture → Mixture is a material / substance made up of two or more different substances which are mixed but are not combined chemically. Mixture is a material made up of two or more different Subs. which are mixed but are not combined chemically.	Students are listening carefully.
Example.	Give any example of mixture? Yes, Correct.	Ma'm (i) Soil (ii) Soft drink are examples of mixture.

Teaching Point	Pupil Teacher's Activity	Student's Activity
Types of Mixture	Mixtures are of two types 1. Homogeneous Mixture 2. Heterogeneous Mixture.	Students are listening carefully and noting down in their notebook.
Homogeneous Mixture	Homogeneous Mixture → A mixture in which composition is uniform and every part of the solution has the same properties.	Students are trying to understand.
Example	For example → Water.	Students are noting down carefully.

Homogeneous Mixture → A mixture in which composition is uniform and every part of the solution has the same properties.

Teaching Point	Pupil Teacher's Activity	Student's Activity.
Heterogeneous Mixture	In this type of mixture, the component can be seen as there are two or more phases present. Example → Mixture of oil and water.	Students are noting down in their notebook.
Solution.	Solution→ It is a homogeneous mixture of two or more substances uniformly Solution has two components. 1) Solute 2) Solvent	Students are listening carefully.
Solvent	Solvent→ The component of solution that dissolve the other component in it is called solvent. The component of sol^n that dissolve the others in it is called solvent	Students are listening as well as noting down carefully.

Teaching Point	Pupil Teacher's Activity	Student's Activity
Solute	The component of solution that dissolve in to solvent is called solute.	Students are trying to understand.
	The component of solution that dissolve in to solvent is called solute.	
Example	A solution of sugar in water is a solid in liquid solution. Here sugar is a solute and water is solvent. i.e. Water + Sugar Water → Solvent Sugar → Solute.	Students are understanding and noting down.
Concentration of solution	Mass by Mass % of solution. = $\frac{\text{Mass of Solute}}{\text{Mass of Solution}} \times 100$	Students are noting down in their notebook.
	Mass by Mass % = $\frac{\text{Mass of Solute}}{\text{Mass of Solution}} \times 100$	

RECAPITULATION -

Define Mixture and its types?

Differentiate between Homogeneous and Heterogeneous Mixtures?

Define Solution and write names of its components?

HOME ASSIGNMENT -

Distinguish between Homogeneous and Heterogeneous mixture?

Give examples of Solvent and Solute?

A 400g solution contains 10g Sugar. Then Calculate the concentration in terms of mass by mass % of the solution.

Any Comment:

Supervisor Signature.

DISCUSSION LESSONS

INDEX

Teaching Subject..... Physical Science .....

Lesson No.	Topic
1.	Work, Energy and Power.

Teacher's Signature

P.T. Name - Sapna Class - 9th
P.T. Roll No.- 07. Duration - 35-40 min.
Subject - Ph. Science Date -
Topic - Work, Energy & Power

INSTRUCTIONAL OBJECTIVES

After going through the lesson, the students will be able to →

Recall the definition of Work and Energy.
Recognise the types of Energy.
Give examples of Work done.
Calculate the value of Work done and Energy.
Calculate the value of Power required to do work.

INSTRUCTIONAL AIDS.

General: Chalk, Chalkboard, duster, pointer etc.

Specific: Chart, Wooden block, wire and a small solid object.

PREVIOUS KNOWLEDGE ASSUMED

Pupil Teacher assumed that before delivering the lesson, the student may have basic knowledge of force and displacement.

PREVIOUS KNOWLEDGE TESTING

Questions	Expected Answers
→ Students, what do you mean by force?	Ma'm any push or pull that either change or tends to change the position of object on which it is applied.
→ If I move a box from point A to point B what I am doing?	Ma'm a force is applied on it by you and there is work done by you
→ Now, can you define work?	No Response.

ANNOUNCEMENT OF THE TOPIC

Well students today we will discuss about Work, Energy and Power required to do work.

Presentation →

Teaching Point	Pupil - Teacher's Activity	Student's Activity.
Work	Work → If a force is applied on a body & it displaces body from its original position then a work is said to be done.	Students are listening carefully. and also noting down in their notebook.
	Work = force × Displacement = f × s.	
	S.I. unit of work is Joule denoted by J.	
Numerical	A force of 5N is acting on an object. The object is displaced through 2m in the direction of force. Calculate the work done.	f = 5N s = 2m W = f × s = 5 × 2 = 10 J.
	Yes, it is correct.	
Energy	Energy → The capacity to do work is called Energy	Students watch on chalkboard carefully.

Teaching Point	Pupil Teacher's Activity	Student's Activity
S.I. Units	S.I. unit of Energy is Joule.	
Types of Energy.	Types of Energy → 1) Potential Energy 2) Kinetic Energy 3) Heat Energy 4) Chemical Energy 5) Electrical Energy 6) Light Energy 7) Nuclear Energy	Students are taking interest and as well as noting down in notebook.
Kinetic Energy.	Kinetic Energy → It is the energy possessed by a body by virtue of its motion is called K.E.	Students are listening carefully and noting.
Expression.	Kinetic Energy = $K.E = \frac{1}{2}mv^2$ m → Mass, V = Velocity of body.	Students are watching on board carefully and noting in notebook.
Numerical	Potential An object of mass 15kg is moving	$M = 15kg$ $v = 4m/s$.

Teaching Point	Pupil - Teacher's Activity	Student's Activity
	with a uniform velocity of 4 m/s. What is Kinetic Energy of object?	$E = \frac{1}{2}mv^2$ $= \frac{1}{2} \times 15 \times 16 \times 8$ $= 120\ J.$
Potential Energy	Potential Energy → Potential Energy is the energy possessed by an object due to its position. **Potential Energy** **P.E. = mgh.** **m → Mass** **g → Acc. due to gravity** **h → Height.**	Students are listening and noting carefully.
Numerical	Find the potential Energy possessed by an object of mass 10kg when it is at a height of 6m. $g = 9.8\ m/s^2$. Yes, correct.	$M = 10\ kg$ $g = 9.8\ m/s^2$ $h = 6\ m$ $P = mgh$ $= 10 \times 9.8 \times 6$ $= 588\ J.$

Teaching Point	Pupil-Teacher's Activity	Student's Activity
Power.	Power is the rate of doing work. $P = \frac{mgh}{t}$	Students are listening carefully

RECAPITULATION-

- Define work? Write the factors on which it depends?
- Define Energy and its Types?
- What do you mean by Power.

HOME ASSIGNMENT-

- Do numericals related to K.E. and P.E. in your notebook?
- Write the various units of Power?

Any Comment:

Supervisor Signature.