

### MODEL LESSON PLAN-

Name of the Teacher:  
Standard : VIII  
Class Strength:  
School:

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Subject : Biological Science  
Topic : Human Respiratory System  
Unit : Structure of Human  
Respiratory System

Date :  
Time :  
Period :

#### INSTRUCTIONAL OBJECTIVES: The pupil

1. acquires knowledge about the structure of human respiratory system.
2. understands the structure and various organs involved in human respiratory system
3. applies his knowledge in identifying various organs in human body.
4. develops skill in observing, drawing and labeling.
5. develops interest in knowing more about human physiology.
6. develops scientific attitude towards the study of human physiology and appreciates the structure of human lungs and its functions.

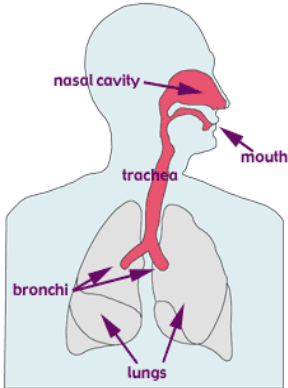
#### SPECIFICATIONS: The pupil

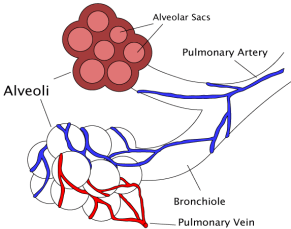
1. recalls the different system of human body.
2. recognises various organs involved in respiration.
3. gives reason for the importance of respiration
4. identifies various organs and gases involved in respiration.
5. defines the process of respiration.
6. locates various organs in respiratory system.
7. infers the function of plural cavity.
8. observes the structure of human respiratory system
9. draws the diagram of human respiratory system.
10. realizes the significance of human respiratory system.

#### TEACHING AIDS:

1. Chart showing the diagram of human respiratory system.
2. Chart showing the diagram of alveoli

Specifications	Content	Learning Experience	Evaluation
recalls	Digestive system, Respiratory system, Nerves system, Excretory system Etc.	What are the different systems in human body ?	<p>A pair of lungs involved in respiration. Yes/ No</p> <p>The process of respiration is very essential for oxidation of food. Yes/No</p>
identifies	Respiratory system	Which system is concerned with respiration ?	
	Respiration	What is the process responsible for oxidation of food in the body ?	
recalls	Oxygen and Carbon dioxide	What are the two major gases involved in respiration?	
identifies	Atmosphere	Where do you get oxygen for respiration ?	
	Lungs	What is the main organ in respiratory system?	
locates	The lungs are found in thoracic cavity	Locates their own lungs in their body	
identifies	A pair of lungs	How many lungs are there in human respiratory system?	
gives reason	Oxygen is necessary for oxidation of food in the tissues. This oxygen is got from the atmosphere through respiration.	Why the respiratory system is very Important?	

Specifications	Content	Learning Experience	Evaluation
defines	Respiration is the process of exchange of Oxygen and carbon dioxide between the body and the outside environment.	Define the process of respiration?	Respiratory system helps you to breath Yes/No
recognises	Nostrils, pharynx, larynx, trachea, bronchi And bronchioles.	Tr. Explain various organs involved in Respiration	What are the organs involved in respiration?
observes	Diagram of human respiratory system	Tr. Shows the chart	
draws	 <p>The diagram illustrates the human respiratory system within a light blue silhouette of a human torso and head. The nasal cavity is shown in red at the top, leading down to the mouth. The trachea (windpipe) is a red tube that branches into two bronchi, which enter the lungs. The lungs are depicted in a light grey color. Labels with arrows point to the nasal cavity, mouth, trachea, bronchi, and lungs.</p>	Draws the diagram of human respiratory System	
locates	pharynx, larynx, trachea, bronchi	Locates the various organ in human respiratory system	Do you think breathing through mouth is good?
gives reason	The hair present inside the nostril prevent the unwanted particles entering the respiratory system	Why should there be hairs present in the nostrils.	

Specifications	Content	Learning Experience	Evaluation
Infers	It products lungs	What is the function of plural cavity?	Lungs are protected by double walled membrane called-----
recognizes	Each alveolus is about 0.2 mm in diameter. It is lined by a single layer of epithelial cells. The alveolus is covered by blood capillaries	Tr. Explain the structure of alveoli	In lungs there are about----- alveoli. a)200million b) 3000million c)130million d) 300million
observes	Diagram of structure of alveoli	Tr. Shows the chart	
draws labels		Draw the diagram of structure of alveoli	
gives reason	During running race our body needs more oxygen. So we inhale more oxygen.	Why we inhale more air during a running race?	The rate of respiration for a minute depends upon the need of -----.
realizes the significance	Respiration is an inevitable activity of all living organisms. Oxygen is got from atmosphere through respiration	Explain the importance of respiratory system	

**REVIEW:** Process of respiration – Structure of respiratory pathway- nostrils, pharynx, larynx, trachea, lungs, alveoli – importance of respiratory system.

**ASSIGNMENT:** 1. Buy a sheep lung from a butchers shop and observe the alveoli through hand lens.  
2. Prepare a model of respiratory system.  
3. What is larynx? Explain about it?

Name of the Teacher :

Std. : XI

School :

## **MODEL LESSON PLAN**

SUBJECT : **BOTANY**

UNIT : **VIRUSES**

SUB-UNIT : **TYPES OF VIRUSES**

Date :

Title :

Period :

### **INSTRUCTIONAL OBJECTIVES :**

#### **The Pupil**

1. acquires knowledge of a) living organisms, b) micro organisms, c) plant viruses, d) animal viruses, e) algal viruses and mico virus, f) bacterial viruses.
2. understands the function of Baceriophage and TMV
3. applied the scientific knowledge of virus to our health
4. develops skills in drawing the diagram of TMV and Bacteriophage
5. appreciates the mass polio vaccine programme in India.

### **SPECIFICATIONS :**

#### **The pupil**

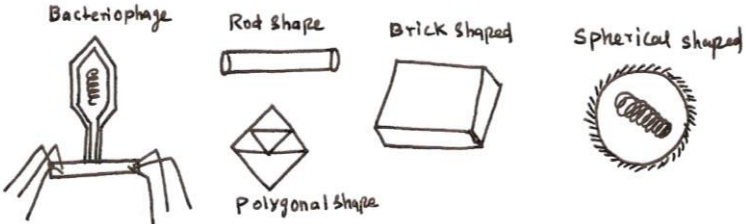
1. recalls the micro – organisms, viral diseases
2. recognizes the various viruses, a) plant viruses, b) animal viruses, c) algal viruses and mico viruses, d) bacteriophages - T4
3. observes the shape of various plant viruses in the chart
4. differentiate between a) plant and animal viruses b) Bacteriophage and TMV

5. identifies the shape of the virus, names of scientists, common cold virus and vaccine.
6. classifies various virus types
7. locates nucleic acid
8. compares the shape of TMV, Bacteriophage and DNA.
9. reasons the use of preventive medicine
10. draws the diagrams of TMV and Bacteriophage
11. labels the parts of the diagram of TMV and Bacteriophage
12. realises the significance of blue green algae and polio vaccine

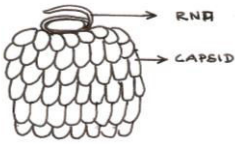
**TEACHING AIDS:**

Chart, Thermacol model of Bacteriophage

SPECIFICATIONS	CONTENT	LEARNING EXPERIENCES	EVALUATION
recalls	Plants and animals	What are the two major groups of living organisms?	In which year virus was discovered?
recalls	We can not see very small organisms through our eye.	Can you see very small organisms through your eye?	
recalls	Micro organisms are very small	What will you call very small organisms	
illustrates	Bacteria and virus are micro organisms	Give an example for the micro organisms?	
identifies	Viruses causes polio and flu	Which is the cause for polio and flu?	
recognizes	viruses - smallest organisms which live like parasites	Teacher explains viruses.	
identifies	In 1892, Dimitry Ivanowsky an discovered viruses 1935 Stanly crystalised the tobacco mosaic virus (TMV)	Who discovered virus?	
recognises	The study of viruses in known as virology	What is the name of the study of virus?	

classifies	<p>Viruses are classified are plant viruses</p> <p>Animal viruses (common cold)</p> <p>Algal viruses (cynophages)</p> <p>Mico viruses (mycophages)</p>	Teachers explained the classification of viruses	An another name of animal virus is called .....
observes		Teacher displays the chart showing the shape of plant viruses	
identifies	Bacteriophage – Rod shaped, spherical shaped – polygonal shaped – Brick shaped	The pupil identifies the various shape of the viruses.	Which one is a brick shaped virus in the diagram?
recognises	Structure simple – crystallizable metabolic activities, respiration are not recorded.	The plant viruse is explained by the teachers.	What is the size of the virus?
locates	It has a nucleic acid in the centre surrounded by protein coat.	Where do you find nuclic acid?	



recognizes	<p>Protein coat is called capsid. Nucleic acid either DNA or RNA. Size of the virus very form 20-30nm, they infect the plant and causes diseases.</p>	How do you call protein coat?	
observes		Teacher displays the chart of TMV.	
draws		The pupil (1) Draws the structure of TMV, (2) labels the part of TMV.	
labels			
recognizes	<p>Rod shaped – length 300 nm – diameter in 18nm – RNA surrounded by protein coat – capsid – capsid made up of identical protein sub units.</p>	The structure of TMV is explained	What is TMV?
recognizes	<p>They are polygonal in out line – very small – size 22 to 33nm single RNA – common cold is caused by virus</p>	Teacher explained animal viruses	What is the size of the animal virus?

identifies	Animal virus is the reason for common cold		What is the reason for our common cold?	
differentiates	<b>Plant virus</b> Rod shaped Nuelic acid DNA or RNA Size 20-300nm	<b>Animal virus</b> polygonal shaped RNA 22-33nm	What is the difference between plant virus and animal virus?	
recognizes	Algal viruses – 1963 sufferman and morris – infecting the blue green algae known cynophages. Polygonal head – helical Tail – DNA.		Algal virus is explained by the teacher	Algal viruses infecting the .....
realises the significance	Blue green algae is used as a fertilizer		In what way blue green algae relevant to out agriculture	
recognizes	Micoviruses: 1951 sundon discovered mico virus in Agarious biporus Double strand RNA at the centre. Virus attacking fungi known as Mycoophages.		Teacher explained micovirus	Virus attacking fungi are known as

recalls

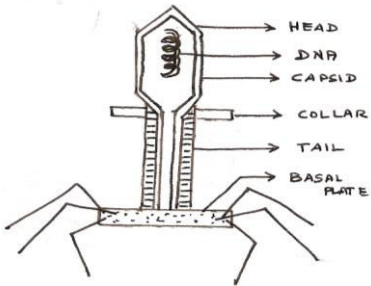
We see lot of mushrooms

identifies

Agaricus biporus

observes

**T4 BACTERIOPHAGE**



draws

labels

compares

Bacteriophage having hEad and tail as like as tadpole.  
Head hexagonal, Tail cylindrical. Head join with tail by means of collar. Base of the tail have basal plate. Double strand DNA is present in the head. Basal plate six prong and six tail fibres.

recognises

After rainy season what do you see in the decaying wood or organic matter.

What is the botanical name of mushrooms?

Teacher displays the chart of Bacteriophage

The pupil:

- a) draws the diagram
- b) labels the part of diagram

Teacher compares the shape of tadpole and bacteriophage.  
Teacher explained bacteiorphage

Base plate of bacteriophage is having ..... and .....

differentiates	<u><b>TMV</b></u> Tobacco mosaic virus Rod shape Single strand RNA	<u><b>Bacteriophage</b></u> Bacterial virus Tadpole like Double strand DNA	Pupil differentiate between TMV and bacteriophage
reasons	Attacks by bacteria we give drugs, for attacks by virus there is no drug we give preventive medicine		Why we use preventive medicine to avoid attacks by virus?
identifies	The name of the preventive medicine is vaccine		How do we call preventive medicine?
realizes the significance	Polio is very nasty dangerous disease. It attacks human limbs. So all children in India were given polio vaccine in a massive scale throughout India. In December 6 and January 17.		Teacher explained about polio vaccine day adopted in India recently.

**REVIEW:**

Various types of viruses – plant virus – shape of virus – the structure of TMV – animal virus– Algal virus – Mico virus – Bacteriophage – T<sub>4</sub>.

**ASSIGNMENT:**

1. Describe the TMV with neat labelled sketch.
2. Describe the structure of Bacteriophage – T<sub>4</sub>



## Model Lesson Plan

Name of the Teacher:

Name of the School :

Standard : XI

Class Strength :

Subject: Chemistry

Topic : Carbonyl Compounds

Unit : Aldehydes

Date:

Duration:45 minutes

Period:

### I. Instructional Objectives : The Student

1. acquires knowledge about the aldehydes
2. understands the preparation, properties and uses of formaldehyde
3. applies the knowledge to give new example for aldehyde
4. develops skill in observing and writing the formulas
5. develops interest in knowing more about formaldehyde and its reactions
6. develops scientific attitude towards the study of aldehydes

### II. Specifications: The Student

1. recalls the general formulae of alcohol and preparation of alcohol
2. recognizes the sources, preparation , properties of aldehyde
3. classifies the types of aldehyde
4. observes the equation for preparation of aldehyde
5. writes the equation for preparation of acetaldehyde
6. describes the reactions of formaldehyde
7. gives reason for formaldehyde reactions
8. identifies the uses of formaldehyde in daily life
9. shows curiosity to know about the various uses of formaldehyde in industrial field

### III. Teaching Aids:

The chart containing the tabular column for common name and IUPAC name of Aldehydes.

Specifications	Content	Learning experiences	Evaluation
recalls	If hydrogen from hydrocarbon- replaced by- Hydroxyl group- alcohol	What are alcohols?	What are aldehydes?
recalls	By hydration of alkenes	How will you prepare alcohol say any one method?	
recognizes	RCHO	Write the general formulae for aldehyde	
cites examples	Formaldehyde Acetaldehyde Benzaldehyde	Can you give example for aldehydes	Give an example for aromatic aldehyde. Give an example for aralkyl aldehyde.
classifies	Formaldehyde and Acetaldehyde- Aliphatic aldehyde. Benzaldehyde- Aromatic aldehyde	Classify aliphatic and aromatic aldehydes from above examples	
observes	$RCH_2OH \xrightarrow{\quad\quad\quad} RCHO + H_2O$	See the equation for preparation of aldehyde	
writes equation	$CH_3CH_2OH \xrightarrow{\quad\quad\quad} CH_3CHO$	Write the equation for preparation of acetaldehyde	Methanol on oxidation gives
recognizes	Methanol on controlled oxidation at 878-923K gives formaldehyde	Explain the method for preparation of formaldehyde?	Formic acid can be prepared by oxidation of
describes	Formaldehyde on oxidation gives formic acid.	Describe the oxidation and reduction reaction of	

uses	Formaldehyde on reduction gives methyl alcohol	formaldehyde	(iii) Propionaldehyde (iv) Benzaldehyde
gives reason	In dyes, varnishes paint preparation and also used as disinfectant.	What are the uses of aldehyde in daily life?	_____ is used in preparation of varnishes.
shows curiosity	Formaldehyde is only the aldehyde which answers for acid test and aldehyde test	Why formaldehyde answers for acid test?	Why Acetaldehyde doesnot answer for acid test?
	Urotropin prepared from formaldehyde is used for urinary antiseptic	See the uses of formaldehyde in medicinal and industrial field	Draw the structure of Urotropin

Review: Formaldehyde – Preparation – Properties – Uses

Assignment: 1. How will you prepare formaldehyde?  
2. Write the various properties of formaldehyde?

Signature of the Student teacher

Signature of the Guide teacher



## MODEL LESSON PLAN

NAME OF THE TEACHER:

SUBJECT: Chemistry

DATE:

NAME OF THE SCHOOL:

TOPIC : Atomic Structure

DURATION: 45 minutes

STANDARD: VIII

UNIT : Structure of an atom

PERIOD:

STRENGTH:

### I. Instructional objectives: The Pupil

1. acquires the knowledge about the structure of an atom and model of an atom
2. understands the structure of an atom and model of an atom
3. applies his knowledge in identifying structure of various atoms
4. develops skill in drawing atomic structure of various atoms
5. develops interest in knowing more about atomic structure
6. develops scientific attitude towards the study of various atomic models and appreciates the structure of an atom

### II. Specifications: The Pupil

1. recalls the definition of an atom
2. recognizes (a) Composition of an atom  
(b) Structure of an atom  
(c) Model of an atom
3. explains about the composition of an atom
4. list downs the properties of sub atomic particles
5. gives reason for the neutral character of an atom
6. describes the structure of an atom
7. observes structure of sodium and chlorine atom
8. cites examples to draw structure of various atom
9. draws the Dalton's and Thomson's model of an atom
10. shows curiosity to know the structure of various atoms

### III. Teaching aids:

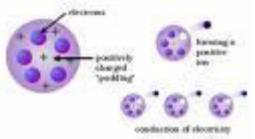
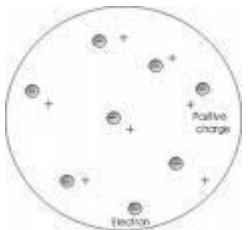
Chart showing the structure of an atom and atomic model

Specification	Content					Learning experiences	Evaluation
recalls	The smallest particle of an element that shows the properties of the element					What is an atom?	
recalls	'atomos' which means indivisible					From which Greekword atom has been derived?	
recognizes	Atoms are made up of three subatomic particles called electron, proton and neutron					What is the composition of an atom?	
explains	Electrons are negatively charged –Protons are positively charged-Neutrons are neutral charged particles					What do you know about electron, proton and neutron?	
lists down	Properties of subatomic particles					Tabulate the properties of subatomic particles	
	Name	Symbol	Relative charge	Mass in amu	Approximate in amu		
	Electron	e	-1	0.00054	0		
	Proton	p	+1	1.00727	1		Symbol of electron is _____
	neutron	n	0	1.00867	1		

Electrons are \_\_\_\_  
charged particles  
Neutrons contain\_\_  
(a)positively charge  
(b)negatively charge  
(c)neutral

Symbol of  
electron  
is \_\_\_\_\_

gives reason	The number of electrons in the extra nuclear part is equal to the number of protons in the nucleus	Give reason for the neutral character of an atom.	An atom is neutral. Why?
describes	Nuclear part – Extra nuclear part	Describe the structure of an atom	_____ and _____ are main parts in the structure of an atom
observes draws	<p>Diagram</p> <p>Sodium atom      Chlorine atom</p>	Draw the structure of sodium and chlorine atom	<p>Atomic number of Sodium atom is _____</p> <p>Number of neutrons present in sodium atom is _____</p>
gives example	Ca Mg Ba	Give other examples of atom?	Give example for atoms
recognises	Dalton's model – J.J Thomson model	Identifies the various models of an atom	<p>_____ discovered Electron</p> <p>_____ model is</p>

draws	<p>Dalton's model (diagram)</p>  <p>J.J.Thomson's model (diagram)</p> 	<p>Draw the Dalton's model and J.J. Thomson's model of atom</p>	<p>called the “raisin” Pudding model</p> <p>Draw the diagram for Dalton's model and J.J.Thomson's model</p>
shows curiosity	Be,Ag,Cu	Draw the structure of following atoms	Draw the structure Of following atoms (a)K (b)Ne
derives pleasure	Tiny particles called atoms contains so many Subatomic particles	See the wonder of an atom	

Review : Composition of an atom – Structure of an atom – Model of an atom

Assignment :

Describe the structure of an atom.

Signature of the student teacher .

Signature of the Guide teacher.

# Model Lesson Plan

Name of the Teacher	:	Subject	:	Commerce	
Date	:				
School	:	Unit	:	Banking	Period : 1 <sup>st</sup> Period
Standard	:	Topic	:	Commercial Bank – Meaning	Duration : 45 mts
Strength	:			Function of accepting deposits	

## I Instructional Objectives

- The student
- acquires knowledge about the terms and concepts of commercial bank,
  - understands the terms, concepts and functions of commercial bank,
  - develops skill in the preparation of chart and documents relating to commercial bank,
  - applies the knowledge to analyze the functions of commercial bank,
  - develops interest in knowing the modern banking activities and,
  - develops desirable positive attitude towards the banking operations.

## II Specifications

- The student
- recalls the term hindrance of finance and functions of a bank,
  - recognizes the meaning of commercial bank,
  - defines the terms commercial bank,
  - classifies the functions of commercial banks,
  - analyses the function of accepting deposit,
  - differentiates current deposit and fixed deposit,
  - gives reason for the letter of introduction,
  - observes i. pay-in-slip, ii. withdrawal form; iii. a chart showing functions of a commercial bank,
  - draws a chart showing the functions of the commercial bank, and
  - fills in properly i. the pay-in-slip, ii. withdrawal form.

## III. Teaching Learning Materials

1. A chart showing the various functions of a commercial bank,
2. Pay-in-slip,
3. Withdrawal form,
4. Pass book,
5. News paper cuttings.

1. Specification	2. Content	3. Learning-Experience	4. Evaluation
The student recalls	Hindrance of finance Finance in the life blood of every business - not easily available	The teacher commences the class by quoting a few familiar situations. What is hindrance of finance?	
recognizes	Meaning – Commercial bank – A bank which accepts various types of deposits from the public and lends short term loans.	The teacher explains the term commercial bank.	What is a commercial bank?
defines	Definition : Banking Regulation Act – Sec. 5 (6) 1949, Banking as the accepting, for the purpose of lending or investment of deposits of money from the public, repayable on demand or otherwise, and withdrawal by cheque, draft, order otherwise.	Define the term commercial bank	
recalls	Functions of commercial bank 1. Deposits 2. Loan 3. Safe deposit	The students are asked to tell the various functions of a bank	
observes	A chart	A chart showing the various functions of the commercial bank is displayed by the teacher and observed by the students.	
classifies	<b>Functions</b> <b>I. Primary function</b> 1. Accepting deposit 2. i. C.D., ii. S.D., iii. F.D., iv. R.D., 3. Lending loans 4. i. C.C., ii. C.D., iii. Loans, iv. discounting of bills 5. Investments	Classify the functions of a commercial bank	Mention the primary function of a commercial bank

	<b>II. Secondary function</b> a. Agency function b. General utility services		
draws	Chart showing the classification of the functions of commercial bank	The student draws the chart	
analyses	<p>Accepting deposit :  Current Deposit  Minimum Rs. 1000 – Rs. 5000 - Repayable on demand – Use of cheques – Low interest – over draft facilities - Business people</p> <p><b>2. Fixed Deposit</b>  Fixed amount – for a fixed period – interest rates vary with periods of deposits – no pass book – no cheque book - FDR loan – Repayable after the expiry of period.</p> <p><b>3. Savings Deposit</b>  Minimum Rs. 100 – 500 Signature of the Guide Teacher - repayable on demand – low interest - restrictions on withdrawals – No use of cheque – cheque can be used.</p> <p><b>4. Recurring Deposit</b>  Fixed amount – for a fixed period – at a periodical interval – interest rates vary with the period of deposit – Repayable after the expiry of the period.</p>	<p>Explain the various types of deposits  Explain the importance of current account.</p> <p>What is the current interest rate for deposit over 1 year</p> <p>Can you use cheque in the saving deposit?</p> <p>Explain the importance of recurring deposit.</p>	<p>Which one of the following deposits is repayable on demands:</p> <ol style="list-style-type: none"> <li>Fixed deposit</li> <li>Saving deposit</li> <li>Recurring deposit</li> <li>Cumulative time deposit</li> </ol>



differentiates	<p>Current Deposit</p> <p>1. Repayable on demand</p> <p>2. Less interest</p> <p>3. No variation in the interest rates</p> <p>4. Pass book</p> <p>5. Use of cheque</p>	<p>Fixed Deposit</p> <p>1. Repayable after the expiry of the period</p> <p>2. More interest</p> <p>3. Interest rates vary</p> <p>4. F.D.R.</p> <p>5. No use of cheque</p>	Differentiate Current deposit and fixed deposit	Mention any two differences between current deposit and fixed deposit
gives reasons	<p>Importance of the letter of the introduction</p> <p>To identify the genuine customer</p>		Why deposits are not accepted with out proper introduction?	
observes	Pay in slip		The pay-in-slip and withdrawal form are displayed by the teacher and observed by the students.	
fills in properly	Withdrawal form-pay-in-slip		The student fills the pay-in-slip properly	

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### Review

1. What is a commercial bank?
- 2.What are the deposits repayable after the expiry of the periods?
- 3.Which type of deposit is suitable for a student?
- 4.What is a pay-in-slip?

### II. Assignment

1. Collect some documents (forms) used in the bank.
2. Draw a chart showing the various functions of a commercial bank.
3. Write an essay on the various types of deposits accepted by a commercial bank after consulting a bank manager.

Signature of the Guide Teacher

Signature of the Student Teacher

## LESSON PLAN

**Subject: ECONOMICS**

Date :  
Period :  
Duration :

Name of Teacher :

Name of the School:

Class : XI

Topic: Agriculture

Unit : The importance of Agriculture in Economic Development

### **Instructional Objectives : The Pupil**

1. acquires the knowledge of the agriculture in Economic Development
2. understands of the role of agriculture in economic development
3. applies the knowledge of the role of agriculture in the recent trends in Indian economy
4. develops the skill of identifying and measuring the contribution of agriculture in Indian economic development
5. Develop proper interest in studying various source materials to develop agricultural products in India
6. Develop positive attitude about the importance of agriculture.

### **Specification: The Pupil**

1. Recalls : agriculture in India. The importance of agriculture in our country.
2. Recognizes : contribution to national income
3. Classifies : the aspects of economic development due to agriculture

4. Explains : i. employment opportunity generated through agriculture  
 : ii. development of non-agriculture (iii) The promoting of international trade
5. Illustrates : Agro-industrial development in India
6. Infers : The capital out-put ratio between agriculture and industry
7. Analyses : The agro-industries leads to standard of living.

## TEACHING AIDS

General classroom equipment A chart Showing the details of the importance of agriculture in economic development.

Specification	Content	Learning experience	Evaluation
recalls	Agriculture  Yes, the people depends upon agriculture  Yes, agriculture to give employment agro-based industries	What is the most significant sector of the Indian economy?  Whether the people depend upon agriculture in our country.  Whether the agriculture is to give any opportunity to the employment.	
recognizes	G.D.P.means Gross Domestic Product	What is meant by G.D.P?	What is meant by G.D.P

Classifies	<ul style="list-style-type: none"> <li>i. Contribution to National Income</li> <li>ii. Provides employment</li> <li>iii. Assists industrial development</li> <li>iv. promotes international trade</li> <li>v. Capital output ratio is small</li> <li>vi. Provides food</li> <li>vii. Eradicates poverty and improves standard of living.</li> </ul>	Classify the importance of agriculture in economic development.	
explains	It contributes the large portion of national income in recent years with the faster development of the non-agriculture sector and its contributes is significant compared to other sector	Explain non-agricultural sector	The ----- ----- development of the non-agricultural sector
explains	Agriculture provides employment to large number of people	Explain to the creation of employment through the development of agriculture as a 'Sector'	Name any industry in cuddalore district

illustrates	It supplies raw materials to industries, many industries converts agricultural products into finished goods. it develops markets for the industrial products in rural areas	Illustrates to assist industrial development viz. “Agro-industry.  Ex.Fertilizer industry, agro-chemical industry	Name anyone agro-industry where fertilizer is produce
explains	At present tea and coffee are very good exports from the farm sector	Explain the ways to promoting of international trade	Explain the ways to promoting international trade
infers	As compared to industry, capital requirements of agriculture is low. Capital output ratio means requirement of capital for the production of a given amount of output. it helps the nation to allocate the precious capital to other sectors.	Infer capital output ratio between agriculture industry and total output	
explains	It gives raw materials requirements of agro-based industries and also food requirements of the growing population	Explain the importance of agriculture development in Indian economy	
analyses	Development of agro-based industries leads to development of agricultural products – supplies cheap food to the people it will increased per capita income will increase – standard of living is also increase	Analyse the development of agro-industries leads to development of standard of living.	

### Assignment

1. Explain the role of agriculture in increasing employment?
2. Write the role of agriculture in international trade?
3. How do you eradicate poverty and improve standard of living?

### Review

1. What is the role of agriculture in economic development?
2. What are the raw materials supplied through agriculture?
3. What you mean by eradication of poverty in agriculture?
4. Discuss any one of the agro-based industries in our district

**MODEL LESSON PLAN**

<b>Name of the Student Teacher:</b>	<b>Subject</b> : English (Poem)	<b>Date</b> :
<b>Name of the School :</b>	<b>Topic</b> : How the Little Kite Learned to Fly	<b>Duration:</b> 45 minutes
<b>Standard : VIII</b>	<b>Unit</b> : The whole poem	<b>Period</b> :
<b>Class Strength:</b>		

**Instructional Objectives:** The pupil

1. acquires knowledge of the central theme of the poem
2. understands the thoughts and feelings expressed in the poem
3. comprehends the meanings of new words
4. develops interest to appreciate the points of beauty in the poem
5. develops skills of listening, speaking and reading
6. develops positive attitude to face the challenges in life by being self confident, bold and determined

**Specifications:** The pupil

1. recalls the events related to the poem
2. recognizes the sounds and sound units
3. locates important facts and ideas
4. grasps the meanings of new words
5. infers the mood and feelings expressed in the poem
6. describes the beauty of thought in the poem
7. gives the central theme of the poem
8. picks out the rhyming pairs of words
9. gives the moral of the poem
10. gets at the tone and modulation of the speaker
11. reads with correct pronunciation, proper stress and intonation
12. summarizes the main ideas of the poem



**Teaching Aids:**

1. A chart depicting the main theme of the poem
2. A chart containing the meanings of new words

Specifications	Content	Learning Experience	Evaluation
The pupil recalls	A kite is a light frame of paper and wood to be flown in the air with the help of a string	What is a kite?	
	Yes. We enjoy flying kites of different colors and designs.	Do you like flying the kites?	
recognizes the sounds and sound units	The whole poem.	Recitation of the whole poem by the teacher.	
locates important facts and ideas	Katherine Pyle	Who has written the poem?	<b>Fill in the blanks:</b> The poem “The Little Kite Learned to Fly” is written by-----
	The little kite.	Who is the speaker of the poem?	
	It is about the feelings of a little kite which wanted to fly high in the sky.	What is the poem about?	

Specifications	Content	Learning Experience	Evaluation
<p>grasps the meanings of new words</p> <p>infers the mood and feelings expressed in the poem</p>	tranquil – quiet	<p>Can you give the meaning of “tranquil”?</p> <p>The prayer was conducted in a <u>tranquil</u> atmosphere.</p>	<p><b>Choose the correct answer:</b></p> <p>(a)<u>tranquil</u> means</p> <p>a. war</p> <p>b. sleep</p> <p>c. quiet</p> <p>(b)<u>tremble</u> means</p> <p>a. fear</p> <p>b. shiver</p> <p>c. steady</p> <p><b>Fill in the blanks:</b></p> <p>“I never can do it”. Here “I” refers to-----</p>
	stirred – moved	The lady <u>stirred</u> the potion until all the chemicals were dissolved in the solution.	
	trembling – shaking	The child started <u>trembling</u> with fear after seeing the snake in the garden.	
	whirling-moving quickly round and round	The kite flew <u>whirling</u> into the air to the dismay of everyone.	
	The little kite thought that it would never be able to fly high in the sky like other big kites.	What did the little kite think it can never do?	
	The line implies the fearful nature of the little kite	What does the line “I never can do it” and “I know I should fall if I tried to fly” imply?	
	The kite thought that it would fall down if it tried to fly high in the sky	What did the kite think would happen if it ever tried to fly?	

Specifications	Content	Learning Experience	Evaluation
describes the beauty of thought	<p>The big kite ignored the words of the little kite and flew swiftly towards the tranquil sky.</p> <p>The sight of the big kite flying into the vast sky made the little kite stir with fright.</p> <p>The big kite was the only companion to the little kite up in the air “Till the big kite looking down could see; The little one rising steadily.”</p> <p>“And the boys like small spots moving around”. Here, the boys playing in the play ground are compared to tiny spots moving around.</p>	<p>How did the big kite react to the fear of the small kite?</p> <p>Read the line “.....the little kite’s paper stirred at the sight”. What was the sight that made it stir?</p> <p>Who were the only companions to the little kite up in the air? Which lines in the poem tell that the big kite kept an eye on the little one?</p> <p>Point out the lines which bring about the comparison in the poem.</p>	<p><b>Fill in the blanks:</b> (a) The----- was the only companion to the small kite.</p> <p>(b) The boys playing in the ground are compared to ----- -----moving around.</p>

Specifications	Content	Learning Experience	Evaluation
gives the central theme of the poem	The small kite felt proud, happy and excited as it sailed along with the big kite side by side.	How did the small kite feel when it sailed with the big kite?	
	The lines express the happiness of the little kite on the attainment of its goal. The lines also reveal that the kite could achieve success only because of its bravery and determination.	“Oh! How happy I am ---- All because I ‘was brave and tried” what is implied in this line?	<b>Choose the correct answer:</b> “Oh! How happy I am !”,here “ I’ refers to (a) little kite (b) big kite (c ) poet
	“Try! Only try! Or I fear you never will learn at all”	Read out the lines which emphasize the encouraging words of the big kite.	Who said “Try! Only try! or I fear you never will learn at all” (a) little kite (b) big kite (c ) boys
	Yes.	Do you like the poem?	
	The little kite wanted to fly high in the sky but was afraid to do so because of its fearful nature. However, with the encouraging words of the big kite it finally succeeds in the accomplishment of its task. The little kite realizes that there is no substitute for bravery and that hard work alone will bring its own reward.	What is the central theme of the poem?	

Specifications	Content	Learning Experience	Evaluation
picks out rhyming pairs of words	said - head fly - try ground - round cried - tried	Pick out the rhyming pairs of words	<b>Give the correct pair of rhyming word</b> a. fly- b. side- c. cried- d. ground-
gives the moral of the poem	The moral of the poem is that to be successful in life one must work hard with determination and be courageous. One must face the challenges in life by being brave, courageous and determined.	What is the moral of the poem?	<b>Fill in the blanks:</b> One should face the challenges in life by being-----
gets at the tone and modulation of the speaker	The whole poem	Reading aloud by the teacher	
reads with correct pronunciation, proper stress and intonation	The whole poem	Reading aloud by the pupils.	Read the poem aloud.

Specifications	Content	Learning Experience	Evaluation
summarizes the main ideas of the poem	The poem expresses the fearful nature of a little kite which wants to fly high in the sky. Initially the little kite was afraid to fly high into the sky and was highly pessimistic. But later on with the motivating words of the big kite, it gathers courage and learns to fly slowly. Finally, it successfully learns to fly high in the whirling sky. It makes the little kite feel proud and happy ultimately. In this poem the poet addresses the small children and emphasizes that one can accomplish any task in life with determination, self confidence and boldness.	Summarize the ideas contained in the poem.	

**Review:**

1. What is the advice of the poet to the young children?
2. Quote the lines from the poem which express the fearful nature of the little kite.
3. How did the kite feel when it sailed with the big kite?

**Assignment:**

1. Explain the lines: “ How happy I am;  
And all because I was brave and tried”
2. Summarize the main ideas of the poem.
3. Learn the poem by heart.

**Signature of the Student Teacher**

**Signature of the Guide Teacher**

### MODEL LESSON PLAN

<b>Name of the Student Teacher:</b> <b>Name of the School :</b> <b>Standard : VIII</b> <b>Class Strength:</b>	<b>Subject :</b> English (Prose) <b>Topic :</b> The Music Maestro <b>Unit :</b> The First Four Paragraphs	<b>Date :</b> <b>Duration:</b> 45 minutes <b>Period :</b>
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**Instructional Objectives:** The pupil

1. acquires knowledge of the following teaching items:
  - (a) Question Tags (Revision)
  - (b) Phrasal Verb (Presentation)
2. understands the above teaching items and the life of the music maestro, Beethoven
3. comprehends the meanings of new words
4. develops skills of listening, speaking and reading and writing

**Specifications:** The pupil

1. recalls the “question tags”
2. uses the “question tags”
3. recognizes the phrasal verbs
4. reads from the substitution table
5. uses the phrasal verbs
6. grasps the meanings of new words
7. uses the new words in sentences
8. reads the passage silently
9. gives the central idea of the passage
10. locates important facts and ideas
11. reads with correct pronunciation, proper stress and intonation
12. summarizes the whole unit

**Teaching Aids:**

1. A chart depicting the picture of Beethoven

## 2. A chart containing the meanings of new words

Specifications	Content	Learning Experience	Evaluation
The pupil recalls	<p>1. She was present yesterday, <b>wasn't she?</b></p> <p>2. You met me at the station, <b>didn't you?</b></p> <p>3. We should be punctual, <b>shouldn't we?</b></p>	<p>1. She was present yesterday. She was present yesterday, <b>wasn't she?</b></p> <p>2. You met me at the station. You met me at the station, <b>didn't you?</b></p> <p>3. We should be punctual. We should be punctual, <b>shouldn't we?</b></p> <p>(Drill)</p> <p>Supply the question tag for the following sentences:</p>	
uses the old structure	<p>1. Time waits for no man, <b>does it?</b></p> <p>2. They have seen the picture before, <b>haven't they?</b></p> <p>3. He often comes late, <b>doesn't he?</b></p> <p>4. Let us go now, <b>shall we?</b></p>	<p>1. Time waits for no man.</p> <p>2. They have seen the picture before.</p> <p>3. He often comes late.</p> <p>4. Let us go now.</p>	
recognizes the new structure	<p>A phrasal verb is a combination of a verb and a particle. The particle may be either a preposition or an adverb. The following are some of the phrasal verbs.</p>	<p>What is a phrasal verb?</p>	



Specifications	Content	Learning Experience	Evaluation								
reads from substitution table.	<p><b>bring about</b>:- cause something to happen Gandhiji <b>brought about</b> a change in the attitude of the Indians.</p> <p><b>carry out</b>:-obey orders The servant sincerely <b>carried out</b> the orders</p> <p><b>look after</b> :- take care Both my parents are abroad. My grand mother <b>looks after</b> the family.</p> <p><b>give up</b>:-abandon or stop One must <b>give up</b> bad habits.</p>	<p>Gandhiji <b>brought about</b> a change in the attitude of the Indians. (Drill)</p> <p>The servant sincerely <b>carried out</b> the orders. (Drill)</p> <p>Both my parents are abroad. My grand mother <b>looks after</b> the family. (Drill)</p> <p>One must <b>give up</b> bad habits.</p>	<p>Use the following phrasal verbs in sentences of your own.</p> <p>(a) put off (b) call for (c) laugh over (d) take up</p>								
	<table><tr><td>Jessie</td><td><b>turned down</b> the offer</td></tr><tr><td>He</td><td><b>gave away</b> the prizes</td></tr><tr><td>She</td><td><b>called for</b> the applications.</td></tr><tr><td>They</td><td><b>put on</b> a new dress.</td></tr><tr><td>John</td><td></td></tr></table>	Jessie		<b>turned down</b> the offer	He	<b>gave away</b> the prizes	She	<b>called for</b> the applications.	They	<b>put on</b> a new dress.	John
Jessie	<b>turned down</b> the offer										
He	<b>gave away</b> the prizes										
She	<b>called for</b> the applications.										
They	<b>put on</b> a new dress.										
John											

Specifications	Content	Learning Experience	Evaluation
uses the new structure	<p>I <b>called on</b> Jackson yesterday.</p> <p>This medicine should be <b>kept away</b> from children</p> <p>How are you <b>getting on</b> with your studies?</p>	<p>Use the following phrasal verbs in sentences of your own.</p> <p><b>1.call on</b> I <b>called on</b> Jackson yesterday.</p> <p><b>2.Keep away</b> This medicine should be <b>kept away</b> from children.</p> <p><b>3.Get on</b> How are you <b>getting on</b> with your studies?</p>	
recalls	<p>A.R.Rahman</p> <p>Michael Jackson</p>	<p>Can you guess the name of the famous Tamil music composer who gave a scintillating tune to our national song?</p> <p>Can you name a music maestro of the recent times who is renowned for his musical contributions all over the world?</p>	
grasps the meanings of new words	<p><b>Maestro-</b> master of an art</p> <p><b>Celebrity-</b> a famous person</p> <p><b>Piano-</b>a large musical instrument</p> <p><b>Violin-</b>a four stringed musical instrument made of wood</p>	<p>Mozart was a great music <u>maestro</u>.</p> <p>Sachin Tendulkar is a <u>celebrity</u> in the field of cricket.</p> <p>Johnson is busy attending the classes for learning <u>piano</u> and <u>violin</u>.</p>	<p>Make sentences of your own by using the following words:</p> <p>(a) celebrity</p> <p>(b) piano</p> <p>(c) maestro</p>

Specifications	Content	Learning Experience	Evaluation
uses the new words	<p><b>Excel</b> - do extremely well</p> <p><b>Compositions</b> - pieces of music</p> <p><b>Rapture</b> - great joy</p> <p><b>Concert</b> - a musical performance</p> <p>1. The musical <u>concert</u> was held in the open ground.  2. Vivek <u>excelled</u> in the field of computer graphics.  3.He received many awards for his musical <u>compositions</u>.</p>	<p>Anand wanted to <u>excel</u> in the game of Chess.</p> <p>Marshall brought about reformation in the nature and techniques of music through his musical <u>compositions</u>.</p> <p>Every one was moved by the <u>rapture</u> of the musical master pieces.</p> <p>The musical <u>concert</u> was held to raise funds for the orphanage.</p> <p><b>Fill in the blanks by using the following words:</b>  ( excelled, compositions, concert)</p> <p>1. The musical -----was held in the open ground.  2. Vivek -----in the field of music.  3.He received many awards for his musical -----</p>	
Reads the passage silently	First four paragraphs of the lesson.	Silent reading by the pupils.	
gives the central idea of the passage	The passage is about the life of the great music maestro, Ludwig Van Beethoven.	What is the passage about?	

Specifications	Content	Learning Experience	Evaluation
locates important facts and ideas	<p>Ludwig Van Beethoven is one of the greatest and most original composers of all times. He is considered as one of the outstanding musical geniuses. Even as a boy of five, he evinced great interest in music.</p> <p>In all branches of music. He was born in Bonn, Germany, on December 16, 1770. Johanam and Maria. His father arranged for a special coaching for his son in piano and violin.</p> <p>Great music composers. Neefe. He predicted that one day Beethoven would certainly become a second Mozart.</p> <p>Beethoven visited Vienna in 1787, to meet the great composer Mozart.</p> <p>His mother died when he was sixteen and his father became an alcoholic. He had to look after all his six younger brothers.</p> <p>He had to go to Vienna along with his brothers to try his luck and make a living out of his music.</p>	<p>Who is Ludwig Van Beethoven?</p> <p>In which field did he excel? Where and when was he born?</p> <p>Who were his parents? How did his father encourage him?</p> <p>Who are Bach and Mozart? Who was the music teacher of Beethoven? What did he predict?</p> <p>When did he visit Vienna? Why?</p> <p>What challenges did Beethoven face during his childhood?</p> <p>What happened after his father's death?</p>	<p>Choose the best possible option from the choice give</p> <p>1. Beethoven was born in the year (a)1777 (b)1770 (c ) 1776</p> <p>2. The music teacher of Beethoven was (a) Bach ( b) Neefe ( c ) Mozart</p> <p>3. Beethoven made great contributions in the field of (a) dance (b)music (c ) literature</p>

Specifications	Content	Learning Experience	Evaluation
reads the passage with correct pronunciation, proper stress and intonation	The first four paragraphs of the lesson.	Loud reading by the pupils.	
summarizes	Beethoven is one of the greatest and most original composers of all times. He is considered as one of the outstanding musical geniuses .He was born in Bonn, Germany, in1770.He had great interest in music even as a boy. He excelled in playing piano and violin at a very young age. His teacher, Neeffe predicted that one day Beethoven would become a second Mozart. Beethoven had to face many challenges in life as a child. He had to shoulder the responsibility of his six younger brothers as his mother died when he was sixteen and his father became an alcoholic. He had to go to Vienna along with his brothers to try his luck and make a living out of his music.	Summarizes the main ideas in the four passages.	

- Review:** 1. Who is Beethoven? Why do you consider him great?  
 2. Who was the teacher of Beethoven? What did he predict?

**Assignment:**

1. Give a brief account of Beethoven's childhood.
2. Explain the greatness of Beethoven as a musical genius.

**Signature of the Student Teacher**

**Signature of the Guide Teacher**

## Model Lesson Plan

Name of the Teacher Trainee:	Subject : History	Date :
Name of the School: R.C.T. Hr.Sec School	Unit : Gupta Period	Duration :
Standard : IX	Topic : Samudra Gupta	Period :
Strength : 45		

### Instructional Objectives: The pupil

1. acquires knowledge of Gupta period, Samudra Gupta's victory and Establishment
2. understands the conquest, victory, establishment of Empire Samudra Gupta's achievement
3. develops skill of drawing, and lactating the victories places of Samudra Gupta
4. develops interest in collecting Antiques, coins, beads, pictures and ornaments of Samudra Gupta
5. develops positive attitude towards the invasions of Samudra Gupta
6. appreciates the expedition of Samudra Gupta change the culture in north India.

### Specifications: The pupil

1. recalls the year, victorious place, father of Samudra Gupta
2. recognizes the early period, victorious place, establishment of empire during Samudra Gupta period
3. classifies the period of Samudra Gupta
4. explains the Alagabad Inscription, expedition in south India, policy of Samudra Gupta
5. differentiates Samudra Gupta rule with other kingdom

6. gives reasons for Samudra Gupta called Indian Napoleon
7. observes the map shown by the teacher
8. locates victorious places of Samudra Gupta in the Gupta period map
9. draws the boundary lines during Samudra Gupta period
10. illustrates the foreign account of Bahia Hun

**Teaching Aids:** Chart Showing the picture of Samudra Gupta

Map containing the expedition of Samudra Gupta

Specification	Content	Learning Experience	Evaluation
recalls	Chandra Gupta	Who was the father of Samudra Gupta?	
recognizes	Before came to throne of Samudra Gupta his father Chandra Gupta ruled over north India.	explain the early period of Samudra Gupta	Samudra Gupta Belongs to in which dynasty?
classifies	<ol style="list-style-type: none"> <li>1. Early life and success</li> <li>2. conquest and victories</li> <li>3. Administration</li> <li>4. Legacy of Samudra Gupta</li> </ol>	The teacher classifies the period of Samudra Gupta	

<b>specifications</b>	<b>Content</b>	<b>Learning experience</b>	<b>Evaluation</b>
recognizes	<p>Samudra Gupta was son and successor of Chandra Gupta</p> <p>After Chandra Gupta Samudra Gupta came into power. His period was 335 AD to 380 AD.</p> <p>Samudra Gupta was fought against his enemy and came into power.</p>	Teacher explain the early life and success of Samudra Gupta	What is the period of Samudra Gupta?
recalls	Chandra Gupta	Who was the father of Samudra Gupta	
illustrate	<p>Samudra Gupta ambassador Hari Sena was establishing the Allahabad Inscription. In this inscription he wrote the victories of Samudra Gupta</p>	The teacher illustrate the Allahabad Inscription	Who established Allahabad Inscription?



specifications	Content	Learning experience	Evaluation
differentiates	Samudra Gupta ambition is conquer the palace, destroy the kingdom and establish his kingdom after that he gives same throne to the king	Teacher differentiates the Samudra Gupta policy with the other kingdom	What was the policy of Samudra Gupta?
explains	Samudra Gupta war against the south Indian kings, he got victory against the Kanchi King Vishnu Gopar, and the Pallavs king who ruled in east sea shore. The north and western kings were also surrounded without any commitments.	Teacher explain the expedition of Samudra Gupta in South India	What are victories of Samudra Gupta in South India?
gives reasons	Samudra Gupta acts as a tiger if any one of the kings against his rule or dominate his place, he fought against without any fear, thus he called Indian Napoleon.	Why Samudra Gupta asked Indian Napoleon?	

specifications	Content	Learning experience	Evaluation
observes	Gupta Period Map	Teacher shows the Gupta period map and explain the victorious place of Samudra Gupta	
locates	Lichavi, Prayagai, Kanchi, Kosalam	Students locates the lichavi, prayagai, kanchi, kosalam	Locates lichavi, Kanchi in the map.
draws	Draw the boundaries of Samudra Gupta in the map	Draws the Boundaries of Samudra Gupta	Draws the boundaries of Samudra Gupta in the map

**Review :** Samudra Gupta early period – his policy – south India expedition- the source of establishment – Indian Napoleon

**Assignment:**

1. Who was the father of Samudra Gupta?
2. Discuss the policy of Samudra Gupta
3. Critically analysis the rule of Samudra Gupta period in India
4. Explain the foreign accounts of Bahia Hun

Signature of Student Teacher

Signature of the Guide Teacher

### **Model LESSON PLAN**

Name of the teacher	:	Subject	: Mathematics	Date:
School	:	Topic	: Menstruation	Time:
Standard	: IX	Sub Topic	: Sector of a circle	Period:
Strength	:			

#### **Instructional objectives: - The pupil**

1. acquires knowledge about the method of finding the area of the sector of a circle
  2. develops understanding of the method of finding the area of the sector of a circle
  3. applies the knowledge to solve some problems using the formula
  4. develops skill in a) drawing free hand sketch of the sector of a circle b) computation
  5. develops interest by discussing the given problem
  6. develops scientific attitude towards the sector of a circle
- and appreciation by making the sector of circles with different measures.

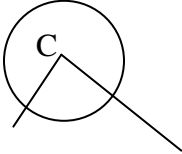
**SPECIFICATIONS:-****The pupil**

1. recalls central angle and formulas for length of arc of the sector of a circle.
2. recognizes the method of finding the area of the sector of a circle.
3. identifies the shape of circle
4. translates the verbal form of central angle to symbolic form,
5. suggests alternate formula for finding the area of the sector of a circle
6. analyses the given problem
7. establishes the required relationship
8. generalizes the area of the sector of a circle with length of arc 'l' and radius 'r'
9. does written calculations systematically
10. discusses the means to solve the problem
11. considers the given problem in all its aspects
12. makes models with the help of paper cuttings

**Teaching Aids:-**

Colour Papers for cutting sector of circles with different measures.

Specifications	Content analysis	Learning Experiences	Evaluation
The pupil identifies	It is circle in shape	What is the shape of this picture?	What are the different types of angles?
	Ring, ball, bangle etc.	Can you give some examples of things that are circle in shape?	
recalls	Area of circle= $\pi r^2$	What is the formula to find the area of a circle whose radius is 'r'?	
	Part of a circle within two radii and an arc is sector	In the circle what is sector?	
recognizes	To find the area of a sector of a circle with length l units and radius r units	Let us find the area of a sector of a circle whose length of arc 'l' units and radius 'r' units	
analyses	Length of the arc l, radius of the circle r, and central angle.	What are the measures needed to find the area of the sector of a circle?	
recalls	If the vertex angle lies at the centre of a circle, then the angle is called central angle.	What is central angle?	

Specifications	Content analysis	Learning Experiences	Evaluation
<p>makes models</p> <p>translates</p> <p>draws neatly</p> <p>recognizes</p> <p>suggests</p> <p>recalls</p>	<p>L ACB is the central angle</p>  <p>ACB is the sector of a circle</p> $A = \frac{D}{360} \pi r^2$ <p>D is the central angle</p> $A = \frac{D}{360} \times 2\pi r \frac{r}{2}$ $\frac{D}{360} \times 2\pi r$	<p>In the paper cutting of circle with 'c' as centre draw two arcs at two different points and denotes it as 'A' and 'B'</p> <p>Now how can you write the central angle in the form of symbol?</p> <p>How can you represent the above circle in a diagram?</p> <p>What can you say about the sector of a circle?</p> <p>What is the area of a sector of a circle whose central angle is 'D' and radius 'r' units?</p> <p>What is 'D'?</p> <p>How can you rewrite the formula in some other form/?</p> <p>What is the formula to find length of arc of a sector of a circle?</p>	<p>What is the value of <math>\pi</math>?</p>

Specifications	Content analysis	Learning Experiences	Evaluation
recognizes	$A = \frac{lr}{2}$	Now what is the formula for finding the area of sector in terms of $l$ ?	
generalizes	Yes	Whether the formula for finding the area of sector in terms of ' $l$ ' and ' $r$ ' is true for all measures of circle?  Let us solve a problem. Find the length of arc and radius if the area of sector a circle is $240\pi$ and whose central angle is $150^\circ$ .	If radius is 5cm, and the length of the arc is $15\pi$ what ' $D$ ' is?
analyses	Given. $A = 240\pi$ $D = 150^\circ$  Length of arc and radius  $240\pi = \frac{150}{360} \times \pi r^2$	What is given in the Problem?  What is to be determined?  Substituting the given details in the area of the sector of a circle, the length of the arc and radius can be found	What is the formula to find $l$ ?

does written calculations systematically	$r = \frac{240\pi \times 360}{150\pi}$ $= \sqrt{576}$ $= 24 \text{ cm}$	Now find the length of the arc?	$A = \frac{D}{360} \pi r^2$ <p>Is it true?</p>
establishes relation ship	$L = \frac{D}{360} 2\pi r$ $= \frac{150}{360} 2\pi \times 24$ $= 20\pi$		

### Review

1. What is central angle?
2. How will you find the arc length and area of the sector of a circle?
3. What is the area of the sector of a circle?

### Assignment

1. The length of arc and radius is  $8\pi$  cm and 10 cm. Find the area of the sector of a circle
2. Find the length of arc if the central angle of the sector of a circle is  $135^\circ$  and radius is  $8\pi$  cm



## MODEL LESSON PLAN – PHYSICAL SCIENCE

**Name of the teacher trainee:**

**Subject: Science**

**Date:**

**Standard: IX**

**Unit: Units and Measurements**

**Period:**

**Strength:**

**sub-unit: Measurement of length**

**Duration: 45 minutes**

**School:**

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### **INSTRUCTIONAL OBJECTIVES:** The pupil

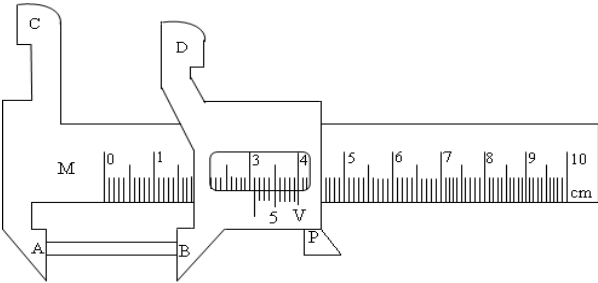
1. acquires knowledge of the
  - (a) fundamental quantities and S.I.Units
  - (b) Description of vernier callipers
  - (c) Least count and its determination
  - (d) Zero error of vernier callipers
2. understands the explanation for vernier callipers and reason for finding out the L.C and zero error of a vernier callipers.
3. applies the scientific knowledge to identify the type of zero error in the diagram.
4. develops skill in
  - (a) observing the diagram of vernier callipers
  - (b) drawing the diagram of vernier callipers
  - (c) labelling accurately the parts of the diagram of vernier callipers
  - (d) finding out the LC of a given vernier callipers
  - (e) calculating accurately the length of an object for the given values
5. Develops Interest in using the physical measurement in day today life
- 6.develops attitude towards science in knowing more about vernier callipers.

**SPECIFICATIONS : The Pupil**

1. recalls the fundamental quantities and S.I. units.
2. recognizes the
  - (a) metre scale
  - (b) least count of vernier callipers
  - (c) procedure to find out the length of cylinder by using vernier callipers
  - (d) zero error and its types
3. gives explanation for vernier callipers
4. gives reason for finding out the LC and the zero error of a Vernier callipers
5. identifies the type of zero error in the diagram shown to them.
6. draws the diagram of the vernier calliper.
7. labels accurately the parts of a vernier callipers
8. finds out the LC of a vernier calliper
9. calculates accurately the length of an object for the given values.
10. shows curiosity to know more about vernier callipers.

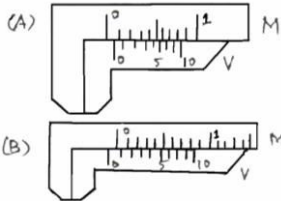
**TEACHING AIDS**

1. Vernier callipers
2. A Chart showing the diagram of a vernier callipers and the diagram to show the types of zero error.

Specifications	Content	Learning Experiences	Evaluation
recalls	Length, Mass and Time SI- System International (Universally accepted system) Metre(m), Kilogram(kg), Second(s) Ampere(A), Kelvin(K) etc.	What are the fundamental quantities? What is meant by SI? What are SI units?	
recognizes	We can measure the length of an object correct to one millimeter with this scale. Because centimeter, millimeter divisions are marked on a metre scale	Explanation for a metre scale	What are the uses of metre scale?
observes	 <p>M = Main scale V = Vernier scale P = Ratchet</p>	The teacher displays a chart showing the diagram of a vernier callipers	How many scales are there in the diagram?
draws		Draw the diagram of vernier callipers	
labels the parts accurately		Label the parts of diagram of vernier calliper	
recognizes	<ol style="list-style-type: none"> <li>1. It has one main scale (cm,mm) with two fixed vertical of jaws and a movable vernier scale with a pair of jaws parallel to the fixed jaws.</li> <li>2. Ratchet is used to move and fix the vernier scale at any point of the main scale</li> <li>3. Downward jaws-measurement of outer dimensions Upward jaws-measurement of inner dimensions Steel strip-</li> </ol>	The teacher explains a vernier callipers	What are the uses of Ratchet?

measurement of depth of objects.

recognizes	$LC = 1M.S.D - 1V.S.D. = 1mm - 0.9mm$ $= 0.1mm = 0.01cm$	The teacher explains the least count of a vernier calliper	Define least count
finds out	$LC = 1mm - 0.9mm$ $= 0.1mm = 0.01cm$	The pupil finds out the least count of a given vernier calliper	The least count of the vernier callipers is.....?
recognizes	<p>A cylinder is holed between the two jaws of the vernier callipers. The position of the zero of the vernier scale on the main scale noted as a main scale reading.</p> <p>The vernier scale division which coincides with any one of the main scale division gives the vernier scale reading.</p> <p>Length of the object = M.S.Reading + (Vernier scale reading Least count).</p>	The teacher demonstrates the experiments to find out the length of a cylinder by using vernier callipers.	<p>(a) What is the formula used for calculation of the length of an object?</p> <p>(b) How will you find out main scale reading?</p>
Calculates accurately	$Length\ of\ the\ object = 3.5 + (40 \times 0.01)$ $= 3.5 + 0.04$ $= 3.54cm$	<p>Calculate accurately the length of the object for the given values</p> <p>M.S.R. = 3.5cm</p> <p>V.S.R. = 4</p> <p>L.C = 0.01cm</p>	
recognizes	<p>When the jaws of vernier callipers are in contact, the zero of the vernier scale coincides with the zero of the main scale.</p> <p>If the zero of the vernier scale is on the right or left of the zero of the main scale is known as positive and negative error respectively.</p>	The teacher explains zero error and its two types	<p>(a) Define zero error</p> <p>(b) What is positive error?</p> <p>(c) What is negative</p>

identifies	(A) Positive error (B) Negative error	Identify the type of error in the following diagrams	error?
			
gives reasons	(i) Because LC is the smallest length measured by vernier callipers and used to find out the thickness.  (ii) To make the measurement correct and accurate.	Give reason for the following (i) Why do you find out LC of a vernier callipers? (ii) Why do you find out zero error?	The smallest length measured by vernier callipers is known as _____
shows curiosity	It is used to find out the length and diameter of a cylinder and etc.	The pupil shows curiosity to know more about vernier callipers	

## REVIEW :

Fundamental quantities – SI units – Description of vernier calipers – least count and its determination – procedure to find out the length of the cylinder – zero error and its types.

## ASSIGNMENT

1. Explain the description of a vernier calliper with a neat diagram.
2. How will you find out the LC and Zero error of a vernier calliper?

**Signature of the Student Teacher**

**Signature of the Guide Teacher**