

CLASS – VII

TERM – 1

CHAPTER - 1

Nutrition in plants (April)

CHAPTER - 2

Nutrition in animals (May)

CHAPTER - 10

Respiration in organisms (July & August)

September - Term 1 Exam

TERM - 2

CHAPTER - 11

Transportation in animals and
plants(October)

CHAPTER - 7

Weather , climate and adaptations of animals to
climate(November)

CHAPTER - 12

Reproduction in plants (December & January)

February - Revision

March- Final Exam

Class VII
Subject : Biology
TOPIC : Nutrition in Plants (April)

Objectives:

Students will get knowledge about various modes of nutrition as

Autotrophic, heterotrophic, saprotrophic, parasitic.

Students will be able to define photosynthesis and understand the importance of photosynthesis.

Students will also understand about symbiosis and insectivorous plants .

Students will develop critical thinking about replenishment of nutrients in the soil.

2.Previous Knowledge Testing :- The teacher will ask following questions.

What does the food give us?

Name various nutrients present in the food?

Name the process by which green plants make their food.

3.Important spellings :-

Nutrition Autotrophic, Heterotrophic, Photosynthesis, starch, glucose, osmosis, semi-permeable membrane, guard cells, stomata, chlorophyll, chloroplasts etc.

4.AIDS / Innovative methods used topic :-

Visual clues, links of videos related to the topic .

Discussion method, lecture method, activity based learning

<https://youtu.be/aBghNAghCYY>

<https://youtu.be/I1LMLLwA48Y>

above links will be shared in the class group for explanation.

Students will make ppt and video related to topic and will be shared in class groups.

5.Procedure :-

BRAIN STORMING : The class would start with a discussion on what the students have already learn in the previous classes and hence what is it that they would learn now. They would also be told about the significance of the topic that they would be starting during the online classes.

FLIP LEARNING : The teacher will explain various modes of nutrition with the help of various links.

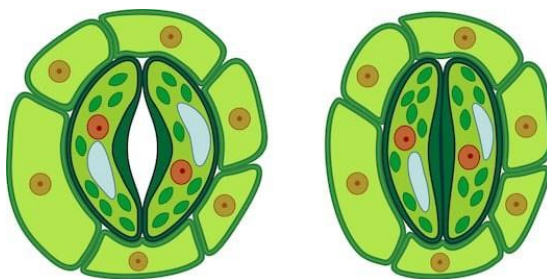
QUESTIONING : Multiple level questions -The teacher will prepare a list of various questions on the topic related to the content and discuss in the online class.

EXPLANATION :

The teacher will explain the raw materials used for photosynthesis along with the activities.

Structure of stomata will be drawn and explained.during online class through zoom app.

Digital content will shared during online classes.



Participation of Students :-

The students will actively participate in class discussion.

Students will draw various diagrams, write questions / answers in their N.B's.

MCQ's and exercises will be done in books.

Students will make videos related to the topic.

Recapitulation :- The teacher will ask

What is meant by nutrition?

Name green pigment present in the leaves.

What are the raw materials required for photosynthesis?

What will happen if plant leaves are devoid of stomata.?

Assignments :-

Draw diagram of open and closed stomata in N.B.

Pasting of pictures of autotrophs and Heterotrophs in N.B.

Why do some plants eat insects?

What is symbiosis?

Plants have_____mode of nutrition.

_____ lives in root nodules of legume plants.

Cuscuta is_____parasite.

What are the functions of stomata?

What are the raw materials required for photosynthesis?

Art Integration :-

Role play on Importance of photosynthesis will be done.

Chart on stomata (OPEN and CLOSED) will be made.

Students will make collage on different modes of nutrition.

technical and artistic skills will be develop while making ppt. and videos.

9.Learning Outcomes :-

Children will become aware about different modes of nutrition, replenishment of nutrients in the soil, stomata.

(2) students will be able to critically analyse the importance of plants for their survival on the earth.

(3) students will become environment friendly during this pandemic by getting knowledge about the variety of plants present in their surroundings.

10. Resources :-

Learning Science by Cordova Publications.

NCERT Exemplar

Links : <https://youtu.be/I1LMLLwA48Y>

<https://youtu.be/aBghNAghCYY>

11.Co-Scholastic Activities :-

Visual and thinking skills will be developed ,also acting and communication skills will be learnt.

12 . Assessment

It will be done on the basis of periodic test,class response, oral test, activities, quiz ,MCQ's etc.

Class VII

Subject : Science (Biology)

TOPIC : Nutrition in Animals (May)

1.Objectives

students will understand about different steps of nutrition i.e. Ingestion, Digestion, absorption, Assimilation, Egestion.

Modes of procuring food by different organisms.

Differences between Temporary and permanent teeth.

Meaning of Tooth decay and its causes.

How nutrition in Human-beings takes place.

Nutrition in Amoeba.

Why nutrition in Ruminants is different from human beings.

Students will be able to have a clear picture on nutrition in Human-beings, amoeba and ruminants

Previous Knowledge Testing :-

What is nutrition?

Why is nutrition important?

How frogs take their food ?

Which organs help in chewing and mixing of food in case of human beings ?

Important Spellings :-

Ingestion, Digestion, absorption, Assimilation, Egestion, Incisors, Canines, Premolars, Molars.

AIDS/Innovative Methods Used :-

Students will be involved in various activities like how to brush teeth and flossing.

Digestive system in human will be explained with digital content.

Children will perform role play on different types of teeth.

LINKS

https://youtu.be/5_4Y0tTHgyk<https://youtu.be/6uvXFpkabcw>https://youtu.be/zr4onA2k_LY

above link will be used for better understanding.

Students will make videos related to topic.

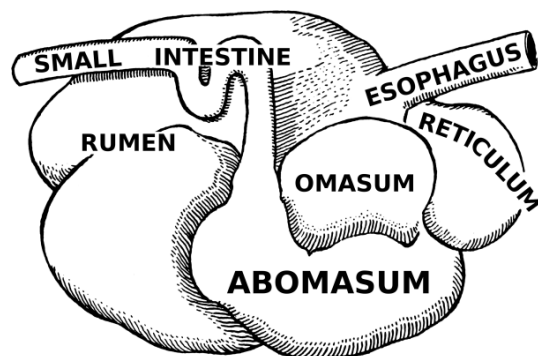
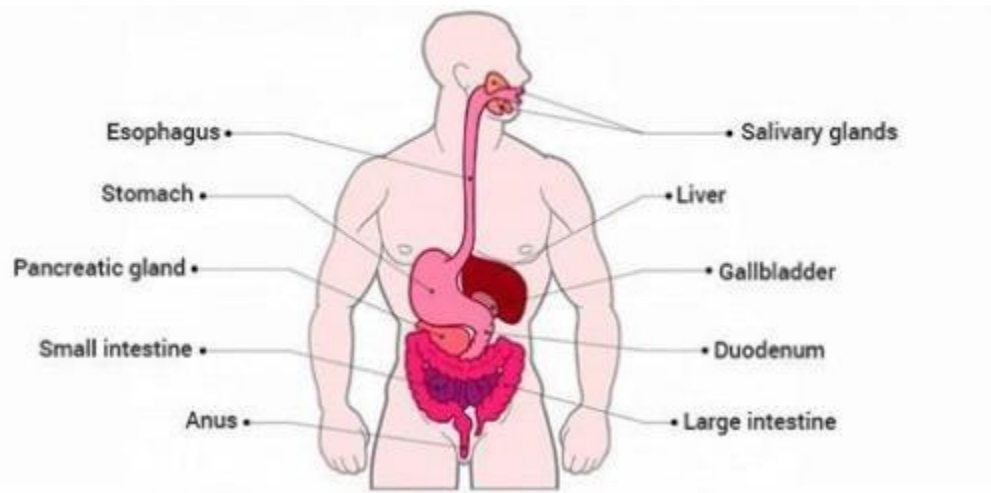
5.Procedure :-

BRAIN STORMING : The class would start with a discussion on what the students have already learn in the previous classes and hence what is it that they would learn now. They would also be told about the significance of the topic that they would be starting during the online classes.

FLIP LEARNING : The teacher will share various links to explain various topics related to the chapter in their class group.

QUESTIONING : Multiple level questions -The teacher will prepare a list of various questions on the topic related to the content and discuss in the online class.

EXPLANATION : Different steps of nutrition in animals will be explained and different parts of Digestive system in Human will be drawn and also will be shown with the help of YouTube links to enhance their understanding and learning. Different types of teeth will be drawn .



Stomach of Ruminants

Participation of Students :-

Children will draw teeth and Digestive system in N.B.

MCQ's will be done in books.

Questions from chapter will be asked from children.

Students will make videos and ppt. related topic and share in class groups.

Recapitulation /Assignment :-

Quiz will be conducted to check the learning of students.

Questions will be asked.

Name the organs of alimentary canal.

What are the functions of human tongue?

Define villi.

Which is the largest gland of human canal?

Name the tearing teeth.

____m is the length of small intestine.

_____ stomach is found in ruminants.

The walls of large intestine absorb_____.

What is assimilation?

Discuss peristalsis.

Art Integration :-

Development of various skills through role play on different types of teeth.

Chart of Human Digestive System will be made by using colourful sheets and pens.

Technical skill will be develop while making ppt. and videos.

9.Learning outcomes

(1)Children will be able to differentiate nutrition in human ,amoeba and ruminants.

(2)students will be able to identify different types of teeth and its function i.e. incisors, canines, Premolars, Molars .

(3) students will learn to stay healthy by following a healthy lifestyle and keep a check on their eating habits during pandemic.

(4) students will get a knowledge about the oral hygiene.

10. Resources :-

Learning Science by Cordova Publishers.

NCERT Exemplar

Online resources.

Diksha platform etc

LINKS

https://youtu.be/5_4Y0tTHgyk<https://youtu.be/6uvXFpkabcw>https://youtu.be/zr4onA2k_LY

11. Co-Scholastic Activities :-

Learning and visual skill will be developed, also acting skill be learnt by enacting in Role Play.

12 . Assessment

It will be done on the basis of periodic test, class response, Oral test, activities and MCQ's etc.

Class: VII

Subject: Science (Biology)

Topic: Respiration In Organisms (July & August)

Objectives

Students will be able to you know and understand:

To follow Healthy lifestyle so as to increase the lungs capacity. How do we respire?

Differentiate between breathing and respiration.

Various organs involved in the respiration and their function.

Meaning and differences between aerobic and anaerobic respiration. **Previous knowledge testing**

The teacher will ask:

What is breathing?

Is breathing and respiration

same? What is meant by

inhalation?

Define exhalation.

Important spellings

aerobic or anaerobic, muscle cramps, larynx, trachea, bronchiole, bronchus, alveole, diaphragm, internal respiration, external respiration, enzymes etc.

Explanation with innovative methods used

Activities:

Videos will be made and shared by the students in the class group on the topic differences between aerobic and anaerobic respiration.

To see the variation in the breathing rate during different activities. To demonstrate the mechanism of breathing through video sharing.

Videos will be shown to the students to understand aerobic and anaerobic respiration, how do we breathe, how air enters the lungs, what we breathe out etc.

Link - <https://youtu.be/l-RFAEJ6OCE>

<https://youtu.be/koQb2e7BGL4>

Procedures

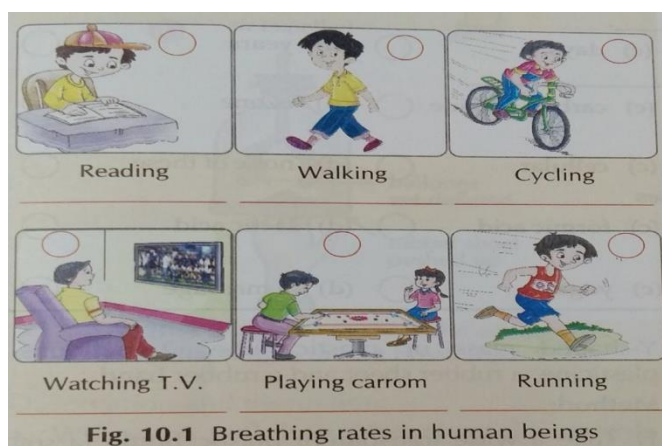
Brain Storming: The class would start with the discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told about the significance of the topic that they would be studying during the online classes.

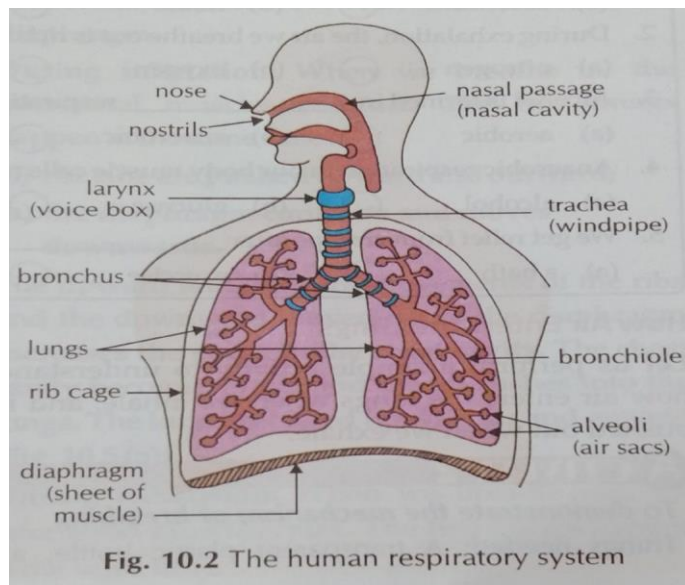
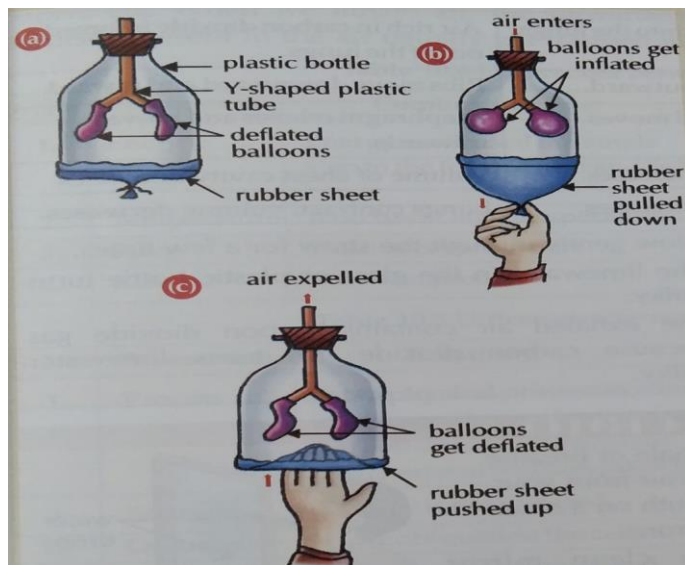
Introduction of the topic: Flip learning - Digital content would be shared with students in the class group.

Questioning- Multiple level questions: Teacher will prepare a list of questions on the topics respiration and its types respiration in human etc.

Students participation

- Students will actively participate in the various activities , make videos and share in the class group.
- They will draw various diagrams related to the topic.
- They will actively participate in the quiz, solving daily practice problems, solving MCQs etc.





Assignments /Recapitulation

The teacher will also ask various questions as follows and give assignments:

- What happens to your breathing rate when you
 - Exercise
 - Go to sleep?
- Why should we breathe in only through our nose?

- 3.What is, the respiration which can occur without oxygen, called? 4.Distinguish between photosynthesis and respiration.
- 5._____turns limewater milky.
- 6.On an average , an adult human being , at rest breathes in and out _times in a minute. 7.End products of anaerobic respiration are___and_____.
- 8.External respiration is also called_____.
- 9.Ribs are pushed_____and_____during inhalation.
- 10.Which acid is produced during muscle cramps_____.

Independent practice

Students will do the questions in their notebook from the textbook.

Art integration with other domain

Students should be able to :

- Draw different diagrams in a beautiful manner with coloured sheets and pens.
- Develop their skills by making various videos related to the topic.

Learning outcomes

Students will be able to know and understand :

- How do we respire?
- Critically analyse the importance of breathing clean air.
- To follow healthy lifestyle so as to increase the lungs capacity.
- Differentiate between breathing and respiration.
- Mode of breathing in humans and muscle cramps.

Resources

Learningscience by Cordova publication, NCERT Exemplar, various online resources including YouTube videos , Deeksha platform etc

Link - <https://youtu.be/l-RFAEJ6OCE>

<https://youtu.be/koQb2e7BGL4>

Co-scholastic activities

Students would be able to:

- Collaborate with each other to explain the different organs involved in respiration in humans.
- Critically analyse the importance of breathing clean air.
- Build character amongst themselves by discussing/ communicating the importance of exercise.

Assessment

It will be done on the basis of the activities, responses, classification chart made including quiz, MCQs, oral and written tests, Periodic tests etc.

September – Term 1 Exam

Class VII

Topic: Transportation in animals & plants (October)

OBJECTIVES: Students will be able to

Define the terms like circulatory system, pulse,

pulse rate, heart beat , dialysis, vascular tissue xylem & phloem,

transpiration etc. Explain circulatory system, excretory system

Explain transportation in animals & plants.

PREVIOUS KNOWLEDGE TESTING: - The teacher will ask about-

Name the various parts of circulatory

system How much blood is present in an

adult person. Name the components of

blood.

What are the functions blood.

IMPORTANT SPELLINGS -: erythrocytes, leucocytes,

thrombocytes, capillaries, arteries, vein, septum, auricle, ventricle, systole, diastole, stethoscope, nephridia, phloem, osmosis, dialysis, uric acid, faeces.

EXPLANATION WITH INNOVATING METHODS USED

Activities

To calculate the pulse rate

To compare the pulse rate at rest & after heavy exercise.

To make stethoscope by using stretched rubber sheet, glass funnel & rubber tube. To demonstrate that transpiration occurs through leaves.

Videos will be shared to students in class group to understand components of blood, blood vessel & its types, internal structure of heart & blood flow , excretion in animal etc.

Link- <https://m.youtube.com/watch?v=7jLWcAeSap0>

https://youtu.be/0CAVZ_R0MQ4

<https://youtu.be/8emdiPXNLcU>

PROCEDURE:

- Brain storming- The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told about the significance of the topic that they would be studying.

Introduction of the topic - ppt & digital content would be shared.

Questioning -: Multiple level question -:

Teacher will prepare a list of question on the topic - why transport in animals & plant is a complex process & its necessity.

STUDENTS PARTICIPATION: -

The students will draw various diagrams related to the topic They will actively participate in quiz, solving daily practice problems, solving mcq's loud reading, collaborative learning , roleplay etc

They will actively participate in the activities by sharing videos in group. This will make students learn better joyfully.

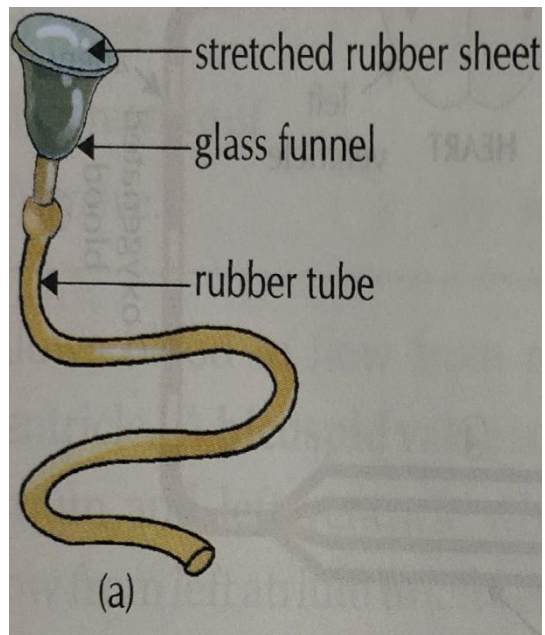


fig.11.9 (a) Model of a stethoscope
(b) Model of a stethoscope in use



Fig.11.5 Measuring the pulse rate

RECAPITULATION / ASSIGNMENTS

The teacher will ask various questions

orally like Why is it necessary to excrete

waste material? Arteries have thick & elastic

muscular walls. Why ?

How does transpiration help in the transport of water & minerals

in plants ? Written Assignment For Practise Will Be Given

Name the following:-

A network of tubes through which blood

flows→ Fluid component of blood→

RBCs are produced in→

Extremely thin blood vessels which connect arteries to

veins→ The number of beats per minute is called→

Double-layered membranous sac in which heart is

enclosed→ The partition wall present in heart→

An instrument used to measure blood-pressure→

Answer the following:-

Define

Heart Beat

Excretion

Osmosis

Dialysis

Ascent of sap

Give the importance of transpiration.

Write the excretory organs in the following

animals. Amoeba, Paramecium →

Earthworms, Leeches →

Insects like

Cockroaches →

Vertebrates →

Independent practice :- Students will do the questions in their notebooks from the book.

ART INTEGRATION WITH OTHER DOMAIN:-

Students would be able to:

-Draw different types of diagram in a beautiful manner with coloured sheet & pens

-Skills will be developed by making various videos.

LEARNING OUT COMES :-

Students will know and understand about :

-Their body and able to analyse it.

-How to remain healthy by keeping a check on circulation.

-Function of different parts of circulatory & excretory system.

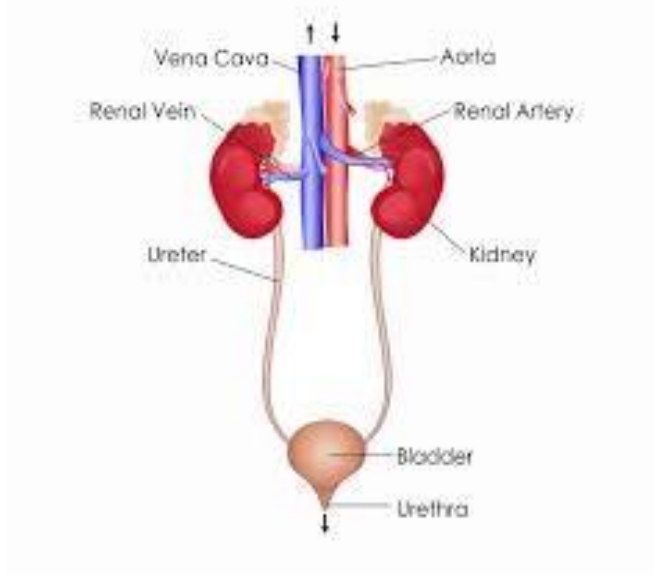
-Why transportation is an important life process?

-The difference between arteries, veins & capillaries

RESOURCES :-

Learning science by Cordova

Publications NCERT exemplars.



Diagrams like Excretory system in Human will be screen shared through zoom app and students will draw side by side.

https://youtu.be/0CAVZ_R0MQ4

4

<https://youtu.be/8emdiPXNLcU>

U

CO SCHOLASTIC ACTIVITIES

The students would be able to :

-Collaborate with each other to explain the transportation in animal and plants through group discussion.

-Critically analyze the importance of circulatory system & excretory system.

-Built character amongst themselves by discussing / communicating the importance of transport in plants & animals.

ASSESSMENT :It will be done on the basis of the activities. responses & the classification chart including quiz mcq's, oral & written test , periodic test etc.

Topic- Weather, Climate & Adaptation Of Animals To Climate (November)

OBJECTIVES: Students will be able to

Define weather, climate &

adaptation Distinguish between

weather& climate List different

types of climatic areas

Explain adaptations of animals on the basis of climate

PREVIOUS KNOWLEDGE TESTING

The teacher will ask about-

Basic knowledge of weather & weather report

Importance & impact of weather in our day to

day life.

What is adaptation & how it is different from acclimatisation.

IMPORTANT SPELLINGS -: Weather, Climate, Hygrometer, Rain gauge, meteorologist, latitude, altitude, polar regions, industrialisation, deforestation, adaptation, nocturnal, blubber, toucan, thermometer.

EXPLANATION WITH INNOVATING METHODS USED -:

Activities

To plot a graph showing the changes in the maximum and minimum temperatures during one whole day

To make collage on animals which are able to adapt themselves according to their Surroundings (given in the book)

To make a poster on the topic Conservation of

biodiversity To make a weather report of a day.

Videos will be shared to students in class group to understand different types of adaptation in different animals, elements of weather, factors, determining climate

Link- <https://m.youtube.com/watch?v=GAF0XZhHqbI>

<https://youtu.be/08VLf8y5x98>

<https://youtu.be/1I7lxW2XxdM>

PROCEDURE :

Brain storming - The class would start with a discussion on what the students have already learnt in the previous classes & hence what is it that they would learn now. They would also be told about the significance of the topic that they would be studying

Introduction of the topic -: FLIP LEARNING - ppt & digital content would be shared.

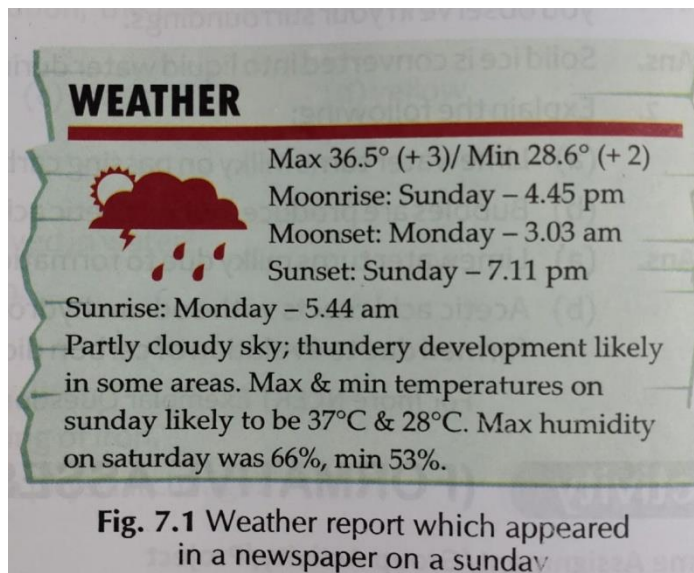
Questioning -: Multiple level question. Teacher will prepare a list of questions on the topic- elements of the weather, factors determining climates & adaptation.

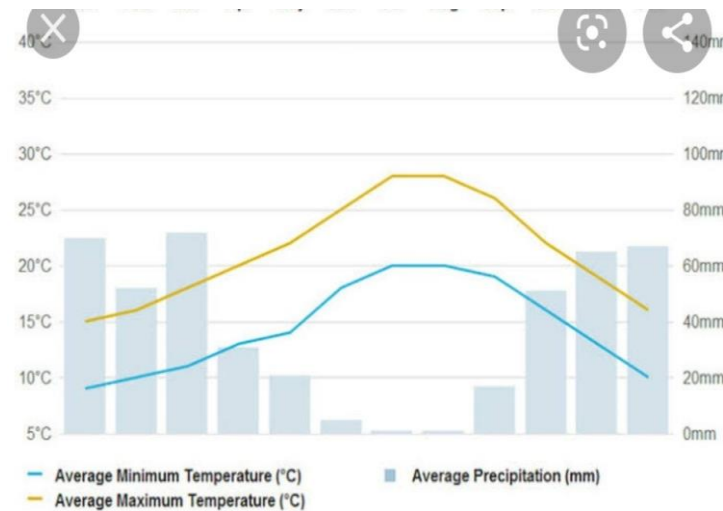
STUDENT'S PARTICIPATION:

The students will draw various diagrams related to the topic

They will actively participate in quiz, solving daily practice problem, solving mcqs, reading collaborative learning etc.

They will actively participate in the online class discussion.





RECAPITULATION/

RECAPITULATION / ASSIGNMENTS :

Fill In The Blanks:-

Moving air is called _____.

Relative humidity is measured with the help of an instrument called ____.

Rainfall is measured in _____.

The instrument used to measure rainfall is _____.

Weather reports are prepared by _____.

All the changes in the weather are caused by the _____.

A toucan has a long _____ to reach the food.

The maximum temperature for a particular day is recorded in ____.

Answer the following question:-

What do you mean by weather? What is meant by climate?

Explain migration with an example?

What are adaptive features in the following:-(Write any 5)

Polar
Bears
Penguins
Camels

5. What are polar regions? Name 4 animals which are well adapted to live in polar regions. Why the regions far away from the equator cooler

What is migration? Name two migratory birds.

Independent practice - students will do the questions in their notebooks from the text book.

ART INTEGRATION WITH OTHER DOMAIN: - Students would be able to-

draw different diagrams in a beautiful manner with coloured sheets & pens. make collage on animals which show adaptation given in the book

make poster on ☐ conservation of biodiversity ☐ ,

LEARNING OUTCOME: - Students will know & understand

terms weather, climate, migration,

adaptation. Differences between weather

& climate

The flora & fauna of polar regions & tropical rain forest.

RESOURCES :

Learning Science by Cordova

Publications NCERT exemplar

<https://youtu.be/08VLf8y5x98>

<https://youtu.be/1I7lxW2XxdM>

COSCHOLASTIC ACTIVITIES

Students would be able to -

Critically analyze that the weather of a place is determined by the sun.

Collaborate with each other to record the weather of a day at a place with respect to temperature, rain fall, humidity of a place.

Use critical & analytical skills to understand the adaptations of animals living in tropical rain forests and polar regions.

ASSESSMENT

It will be done on the basis of the activities, responses & the classification on online class (like quiz, mcq's, oral & written text , test etc).

CLASS-VII

Topic: Reproduction in Plants (December & January) OBJECTIVES :

Students will be able to

Explore different varieties of plants.

Define the terms - asexual & sexual reproductions, pollination, fertilization. Explain the different types of asexual reproduction.

Understand the sexual reproduction in plants Explore the different modes of seed

dispersal . **PREVIOUS KNOWLEDGE**

TESTINGS :

The teacher will ask

about - What is reproduction?

Name its two types.

Which is the most attractive part of a plants ? Name various parts of a flower.

IMPORTANT SPELLINGSS : asexual & sexual reproduction, fragmentation, spore, cutting , layering , grafting, tissue culture, unisexual, bisexual, pollination, fertilization, dispersal, germination, drumstick plant, orchids, dandelion, madar calotropis .

EXPLANATION WITH INNOVATING METHODS USED :

Activities -:

To observe spore formation on a bread mould.

Pasting of flowers after drying, to differentiate between unisexual & bisexual flowers. Collecting & pasting of different types of seeds.

Videos will be made by the students and shared in their class group on the topic sexual & asexual reproduction.

Videos will be shared with the students in their class group to understand different types asexual reproduction, sexual reproduction in plants, different modes of seed dispersal.

Link- <https://m.youtube.com/watch?v=1OFF2qYvLag>

<https://youtu.be/P9qbtia8vSI>

PROCEDURE :

Brain storming - The class would start with a discussion and what the students have already learnt in the previous classes & hence what is it that they would learn now. They would also be told about the Introduction they would be studying during the online classes.

Introduction of the topic- Flip learning - Digital content would be shared with the students in the class group.

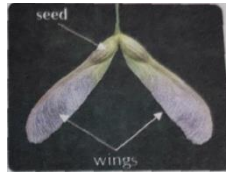
Questioning - Multiple level question teacher will prepare a list of question on the topic- Why reproduction in plant is a complex process & its necessity .

STUDENTIS PARTICIPATION :

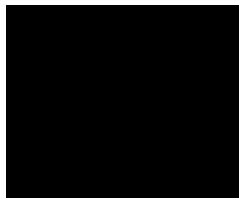
- The students will draw various diagrams related to the topic
- They will actively participate in quiz, solving daily practice problem, solving MCQ's etc.
- They will actively participate in the activities , make videos and share in the class group.



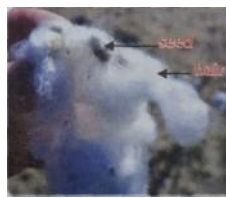
(a) winged seed of drumstick



(b) winged seeds of maple



(c) hairy seeds of madar (aak)



(d) seed of cotton

Fig 12.23 Seeds are dispersed by wind

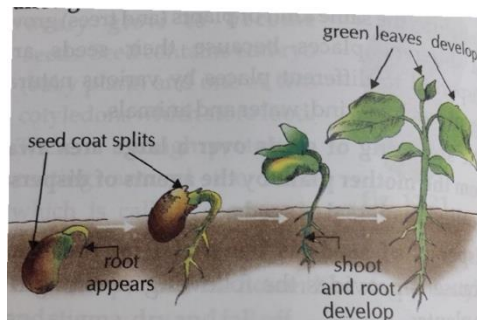


Fig. 12.27 Seeds germinate under suitable conditions to produce new plants.

petal

sepal

Stamen
(Male reproductive
part of flower)

pistil (female
reproductive part
of flower)

thalamus

pedicel

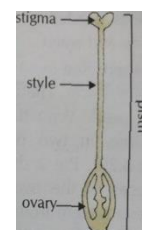
82

pollen grains

Here, anther
has been
cut open
to show
pollen grains
inside it.

anther

filament →



ASSIGNMENTS / RECAPITULATION :

The teacher will also ask various questions as follows and give assignments :

1. Why are artificial vegetative reproduction methods so commonly used nowadays?
2. What is the name of yellow powdery substance present in the anther of a flower?
3. Why is dispersal of seeds essential for plants?
4. Vegetative propagation in potato takes place through ____.
5. ____ is the female reproductive organ of the plant.
6. The ovules present in an ovary grow to become ____.
7. The anther contains ____.
8. ____ Ripened ovary is known as ____.
9. ____ Seeds of drumstick plant are dispersed by ____.
10. ____ The fusion of male gamete with the female gamete to produce zygote is called ____.

Independent practices- Students will do the questions in their notebooks from the text book. **ART INTEGRATION WITH OTHER DOMAIN :**

Students would be able to

Draw different types of diagrams in a beautiful manner with coloured sheets and pens
Paste picture of different flowers whose seeds are dispersed by different methods.

LEARNING OUTCOME :

Students will know and understand:-

- Importance of nature and plants.
- The nature and their surroundings by exploring different types of plants around them and becoming more close to the nature.
- Terms related to different types of asexual reproduction

-Functions of different part of plants in the process of reproduction.

-The differences between asexual & sexual reproduction

-Modes of dispersal of seeds .

RESOURCES :

Learning Science by Cordova Publications ,NCERT Exemplar , Various online resources including YouTube videos , Diksha Platform etc.

Link- <https://m.youtube.com/watch?v=1OFF2qYvLag>

<https://youtu.be/P9qbtia8vSI>

COSCHOLASTIC ACTIVITIES :

The students would be able to :-

-Collaborate with each other to explain the parts of flower.

-Critically analyze the importance of reproduction.

-Use analytical & critical skills to find why seeds are dispersed.

-Built character amongst themselves by discussing / communicating the importance of reproduction for the continuity of life on earth.

ASSESSMENT :

It will be done on the basis of the activities responses & the classification chart including quiz, MCQs, oral & written test , Periodic test etc.

February - Revision

March - Final Exam