EMMANUEL SCHOOL
MOTIHARI

Subject SST:-History.
class 7
chapter 1, The mediaeval period

last year we learn of two great dynasties that ruled ancient India.

the Maurya dynasty
the Gupta dynasty

we divided study of history into two types

prehistory:- no written records
history:- written records
written records in three periods.

Ancient history period
mediaeval period
modern History period

S|M|T|W|T|F|S

Date 20.04.20

Subject :- SST (History)
class — VII
Chapter no:- 01. The Medieval Period.

Last year we learnt of two great Dynasties that ruled Ancient India
: The Maurya Dynasty
: The Gupta Dynasty.

We divided study of History in two types
: PreHistory - no written records
: History — written records

Now, we have to divide all across the world History (written records) in three periods
: Ancient history period
: Medieval Period
: Modern history Period

In class 6th we have learnt about Ancient Period of history (Indian history)

Now, class VII we will learn about Medieval Period of India's History.

- The word "Medieval come from the Latin word Medius (middle) and Aevum (age)

Let's talk about Indian History which is also divided in three periods:.

- Ancient Period (5000 BCE when human learnt to write - in India - till Emperor Harsharadhen's death in 647 CE).

You can do anything, but not everything 2020-4-21 12:11

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S M T W T F S

- Medieval Period: (647 CE death of Ancient Emperor Harshvardhan - till 1707 CE Death of last important ruler of Mughal emperor of Medieval Period.

- Modern Period: -(1707 CE till date.) we also call it Machine Era after impact of Industrial Revolution from Europe.

CHAPTER - 01 : The Medieval Period

In this chapter, you will be to learn:-

(a) Major Political Development.
(b) Importance of Geographical Knowledge.
(c) Keeping records
(d) New social and Political groups.
(e) Old and New Religions.

The medieval period in India can be divided broadly into two Phases (a) the early medieval period (eighth to thirteenth Century) (b) the later medieval period (thirteen to eighteenth century)

The history of early medieval period is centred on power struggles among regional Kingdoms of both North and South India. Northern Part of India was highly affected tribes from central Asia entered India from the mountain passes in the

north-west. They established Turkish, Afghans, Persian and Mongol dynasties that ruled in India from 12th to 18th Centuries. Under their rule, Islamic customs influenced political, economic, social and cultural life in India.
Southern Part of India was untouched. Prosperous kingdom like the Cholas and the Rashtrakutas flourished in south.

② Importance of Geographical knowledge:- Knowing a region's geography helps us to understand its history better. In this, maps are of great help. The geographical features of a region, and the region's location with respect to other regions. Such information may explain why a region prospered or was frequently invaded or remained isolated.

③ Source of Information for Medieval Period:.
(I) Epigraphic evidence - Inscriptions
(II) Numismatic evidence - Coins.
(III) Archeological evidence - buildings, sculpture, etc.
(IV) Artistic evidence: - Paintings.
(V) Literary evidence: - historical writings.

④ Inscriptions are writing engraved on hard surfaces like metal, rocks and stones. the study is called epigraphy.

⑤ Long Poem in the praise of kings, Lands donated to temples, acheivements are called Prashasti. (usually copper plates).

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① Coins tells us about the Kingdom, confirms dates during which Kings ruled, events in life, acheivements etc.

② Monuments and Buildings:- tells us about the period during which they were built. They speak about religion, Political Social condition and application of scientific techniques behind it.

③ Paintings illustrate the artistic progress of the time, serve as a record of the lines of descent of Kings and nobles, the way of dressing, events, life of people etc.

④ Literary evidence consists of historical writing biographies, Plays novels and epics. It is two types.

(a) Indigenous sources (created within the country)

(b) Poets and Chroniclers were appointed by the King to record each and every event datewise.

Exp:- life and achievements of Kings of Kashmir in Rajatarangini by Kalhana. (b) Prithviraj Raso, written Chand Bardai in 12th century.

(b) Foreign Sources (written by foreign travelers to the country (look at the book - Page No. 72)

Exp:- (a) Alberuni (the Persian traveler) came to India in Mahmud of Ghazni in 11th century. He mastered in Sanskrit and wrote a scientific treatise called Tahqiq-I-Hind (An Enquiry into India.

(b) Ibn Batuta (14th century CE) Morocco - wrote about Muhammad Bin Tughlq. His work 'Rihla'

(c) William. Hawkins & Sir Thomas Roe - English - ambassador sent by the British ruler James to the court of Jahangir's court.

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New social and Political Groups: - Many new social groups emerged. Some of these groups also became politically powerful. Among them were the Rajputs warriors of Rajasthan, Sikhs religious group of Punjab. The Jats of Haryana who were farmers, The Ahoms conquered and ruled in Assam and the Marathas who were warriors of Maharashtra.

Old and New Religions:- Hinduism went through some changes in the medieval period. New deities came to be worshipped.

Islam:- Islam, the religion of the Muslims, arose in Arabia in the seventh century A.D. Islam was brought to India by Arab traders. Later Muslim conquerors established kingdoms in India. They ruled according to Islamic law. Holy book of Muslim is Quran.

A wise man gets more use from his enemies than a fool from his friends.

Sub - SST. History.
Class - VII

A. Answer the following Question.

(i) What is importance of geographical knowledge?
(ii) What is epigraphy?
(iii) What is numismatics?
(iv) What are Prashastis?
(v) Name two Indian literary sources of Medieval Period.
(vi) Who brought Islam in India?
(vii) What were the important kingdoms that flourished during the early medieval Period in India?
(viii) Name the important foreign travellers and writers who visited India during the Medieval Period

(B) Do multiple choice Question in book.

Believe those who are seeking the truth. Doubt those who find it.

असाइनमेंट -I हिन्दी कक्षा - VII

1. सही विकल्प पर (✓) का चिह्न लगाइए—

(क) स्पर्श व्यंजनों की संख्या होती है—

(i) 20 (ii) 25

(iii) 22 (iv) 21

(ख) रटंत, खिलौना, मथनी में कौन-से प्रत्यय जुड़े हैं?

(i) कृदंत प्रत्यय (ii) स्त्री प्रत्यय

(iii) तद्धित प्रत्यय (iv) नामधातु प्रत्यय

(ग) 'हरियाली' भाववाचक संज्ञा बनी है—

(i) संज्ञा से (ii) सर्वनाम से

(iii) विशेषण से (iv) क्रिया से

2. निम्नलिखित रिक्त स्थान भरिए—

(क) _____ को राजभाषा का स्थान प्राप्त है।

(ख) वसंत _____ सबका मन मोह लेती है।

(ग) उपसर्ग का _____ रूप में कोई अस्तित्व नहीं है।

(घ) भगवान भाव _____ भूखे होते हैं।

3. सही कथन पर (✓) का तथा गलत कथन पर (✗) का चिह्न लगाइए—

(क) 'ओ३म' एक प्लुत स्वर है।

(ख) संधि का अर्थ है—मेल अथवा जोड़ना।

(ग) द्विगु समास में पूर्व पद संख्यावाची होता है।

(घ) जिन शब्दों से स्त्री जाति का बोध होता है, उन्हें पुल्लिंग कहते हैं।

4. निम्नलिखित को सुमेल कीजिए—

(क) ओष्ठ	(i) कुमति
(ख) ईख	(ii) प्रश्नवाचक सर्वनाम
(ग) सुमति	(iii) निजवाचक सर्वनाम
(घ) कौन	(iv) तत्सम शब्द
(ङ) अपना	(v) तद्भव शब्द

5. निम्नलिखित प्रश्नों के उत्तर दीजिए—

(क) भाषा और बोली में अंतर स्थापित कीजिए।

(ख) वर्तनी में अशुद्धियाँ क्यों पाई जाती है?

(ग) जिसकी पत्नी मर गई हो, उसे क्या कहते है?

(घ) वचन की सोदाहरण परिभाषा दीजिए।

e.g — $3 \times (-4) = -12$
$5 \times (-3) = -15$
$(-5) \times 30 = -150$ etc.

Multiplication of two negative integer —

Rule② The product of two negative integers is a positive integers and it is equal to the product of their absolute values i.e product of their values leaving negative sign.

e.g — $(-5) \times (-4) = 20$
$(-7) \times (-2) = 14$ etc.

Finding the product of more than two integers.

Rules — ① Ignoring the signs, find the product of all integers.
② Count the number of -ve integers which are to be multiplied
③ If the -ve integers to be multiplied is even put (+) sign or no sign before the product obtain in (1).
④ If the number of -ve integers to be multiplied is odd, put (-) sign before the product obtain in (1).

e.g: ① $8 \times (-2) \times (-3) \times (-5) = -(8 \times 2 \times 3 \times 5) = -240$
(Here number of -ve integers is 3 odd)

② $(-5) \times (-2) \times (-3) \times (-4) = +(5 \times 2 \times 3 \times 4) = 120$

Here numbe of integers having -ve sign is 4 (even).

Unit-1 Assignment (7) Class- VII Sub - Maths

(3) If a is an integer and $a \neq 0$, then $0 \div a = 0$, but $(a \div 0)$ is not meaningful.

e.g. (i) $\frac{0}{6} = 0$

(ii) $0 \div (-4) = 0$

(iii) $6 \div 0$ = meaningless.

Now Solve these questions —

(i) $-20 \div 5 = ?$

(ii) $35 \div 7 = ?$ (iii) $(-49) \div 49 = ?$

(iv) $(-31) \div [(-30) + (-1)] = ?$

(v) $0 \div (-12) = ?$ (vi) $(-9) \div 0 = ?$

(vii) $(-36) \div (-1)$ (viii) $(-105) \div (-21)$

(ix) $(-63) \div 63$ (x) $-132 \div 12$.

Note — Students are advised to refer to their text book by R.S. Agarwal's for class 7. Exercise 1 A, B, C, D and CCE Test paper questions and solve them.

Unit-1 Assignment. (5)

Class - VIII
Subj - Maths.

(7) Subtract -134 from the sum of 38 and -87

(8) Simplify - ① [36 - (-9)] + [15 - (-25)]
② [-25 - (-5)] + [-20 - (-40)]

(9) The sum of two integers is -256. If one of them is 180, find the other.

(10) A train moves 250 Km east from Delhi. Again it returns 105 Km west what is the final distance of the train from Delhi?

(11) At Srinagar temperature was -5°C on Monday and then it dropped by 2°C on Tuesday. what was the temperature of Srinagar on Tuesday? On wednesday, it rose by 4°C. what was the temperature on this day?

(12) A plane is flying at the height of 5000 m above the sea level. At a particular point, it is exactly above a submarine floating 1200 m below the sea level. what is the vertical distance between them?

(13) The difference of an integers P and -8 is 3. Find the value of P.

Multiplication of Integers:—

Rules — ① To find the product of two integers with unlike signs, we find the product of their values regardless of their signs and a minus sign to their product.

Assignment - 1.

Unit - 1 (Integers) Class - VII

Subj - Maths.

Counting numbers — 1, 2, 3, 4, 5 ... etc are natural numbers.

Whole numbers - All natural numbers together with 0 are called whole numbers.

Thus, 0, 1, 2, 3, 4, 5 - - - etc are whole numbers

Integers — All natural numbers, 0 and negatives of counting numbers are called integers.

Thus $-4, -3, -2, -1, 0, 1, 2, 3, 4$ - - - etc are all integers.

+ve integers — 1, 2, 3 - - - etc.

-ve integers — $-1, -2, -3$, - - - etc.

0 is neither +ve nor negative.

Absolute value of integers —

The absolute value of an integer is always positive or zero.

The absolute value of a nonzero integers is always +ve and absolute value of zero is zero. The absolute value of x is denoted by $|x|$.

Thus — $|2| = 2$, $|0| = 0$; $|-3| = 3$

Thus — $|x| = x$ if $x \geq 0$

$= -x$ if $x \leq 0$

$|0| = 0$ or -0

Number line — Number line is a line on which integers in ascending order are repre- points from left to right and integ descending order are represented by nts from right to left.

Unit-1 Assignment (2) Sa Class - VII
Subj - Maths.

(i) A student attempts all question but only 9 of his answers are correct. What is her total score?

(ii) One of her friends gets only 5 answers correct. What will her score?

Division of Integers :—

Rule 1 — Division of ~~two~~ two integer having two unlike signs, we divide their values regardless of their signs and give minus sign to the quotient.

e.g — (i) $-30 \div 5$

$= -(30 \div 5)$

$= -6$

(ii) $72 \div (-8)$

$= -(72 \div 8)$

$= -9$

Rule (2) — Dividing integers having like signs, we divide their values regardless of their signs and give a plus sign to the quotient.

(i) $98 \div 14 = 7$

(ii) $(-48) \div (-16)$

$= \frac{+48}{+16} = 3$

Unit-1 Assignment (4) Class-VII
Subj- Maths.

Subtraction of integers —

Rule — To subtract an integer from other integer, we will add inverse of the integer to be subtracted to the other integer.

$a - b = a + (-b)$

e.g. $5 - (-9) = 5 + 9 = 14$.

Now solve the following —

(1) $15 + (-8)$ (2) $-3 + (-4)$ (3) $-7 + 5$
(4) $-12 + 119$

(2) Add — $(-270) + (-55)$; $535 + (-240)$; $-986 + 240$; $-560 + (-328)$

(3) For the following values of a and b verify that $a - (-b) = a + b$
(i) $a = 118, b = 125$ (ii) $a = 28, b = 11$

(4) Find the additive inverse of —
-83 ; 256 ; 0 ; -2001

(5) Subtract —
(i) 28 from -42
(ii) -66 from (-34)
(iii) 318 from 0
(iv) -153 from -240

Subtract the sum of -1032 and 878 from -87.

Unit-1 Assignment (7) Class - VII
Sub - Maths.

Properties of Multiplication of integers —

Properties of multiplication of integers is same as those of whole numbers. In general they are —

(i) Closure property of Multiplication — $a \times b = ab$.

(ii) Commutative — $a \times b = b \times a$.

(iii) Associative — For any three integers a, b, c — $(a \times b) \times c = a \times (b \times c)$

(iv) Distributive — For any three integers a, b, and c — $a \times (b + c) = a \times b + a \times c$.

(v) Existence of Multiplicative identity — For any integer a,
$a \times 1 = 1 \times a = a$.

(vi) Multiplication of an integer by -1. —
$a \times (-1) = (-1) \times a = -a$.

Now Solve these Questions —

1. Find — (i) $15 \times (-16)$ (ii) $21 \times (-32)$ (iii) -55×14

2. Find — (i) $3 \times (-1)$ (ii) $(-1) \times 225$ (iii) $(-1) \times (-2) \times (3) \times$

3. Verify the following —

(i) $(-21) \times [(-4) + (-6)] = [(-2) \times (-4)] + [(-21 \times (-6)]$

(ii) $18 \times [7 + (-3)] = [18 \times 7] + [18 \times (-3)]$

(4) Find the product using suitable properties :—

(i) $36 \times (-48) + (-48) \times (-36)$ (ii) $8 \times 53 \times (-125)$

(iii) $15 \times (-25) \times (-4) \times (-10)$ (iv) $(-41) \times 102$ (v) $7 \times (5$

(vi) $625 \times (-35) + (-625) \times 65$ (vii) $-57 \times (-19) + 5$

(5) In a class test containing 15 Questions, 4 marks for eve answer and (-2) for every incorrect answer.

Class-VII To Remember Sub.- G.K.

India—Our Country Page no.-1

1. Indian Firsts

Write the names of these famous firsts in India.

1. Woman speaker of a State Assembly — Shanno Devi
2. Indian Civil Service officer — Satyendranath Tagore
3. Woman advocate — Cornelia Sorabji
4. Astronaut — Rakesh Sharma
5. To climb Mount Everest without oxygen — Phu Dorjee
6. Oscar winner — Bhanu Athaiya
7. Test captain — C. K. Nayudu
8. Man to swim across the English Channel — Mihir Sen
9. Woman to swim across the English Channel — Arti Saha
10. Magsaysay Award winner — Acharya Vinoba Bhave
11. Nobel Prize winner — Rabindranath Tagore
12. Woman chief minister of a state — Sucheta Kriplani
13. First Commander-in-Chief of independent India — K. M. Cariappa
14. Miss Universe — Sushmita Sen
15. Dadasaheb Phalke Award recipient — Devika Rani

Know with Derek

The *Bengal Gazette* was the first newspaper to be published in India by James Augustus Hickey on 29 January 1781.

Kumari Archana

Class– VII To learn Sub.– G.K.

 Page no. – 02

2. Bharat Ratna and Other Awards

The Bharat Ratna is the highest and the most respected civilian award in the Democratic Republic of India. This is awarded to recognise exceptional service or performance of the highest order. The President of India presents the award to the winners.

Complete the crossword with the help of the given clues.

Across

3. Won Nobel Prize for Economics in 1998 (7, 3) Amartya Sen
5. A respected physician and freedom fighter, served as the Chief Minister of West Bengal for 14 years (1, 1, 3) B. C. Roy
9. Architect of the Indian Constitution (8) Ambedakar
10. A famous sitarist, set the music for *Saare Jahan Se Achha* (4, 7) Ravi Shankar

Down

1. With first name as Nelson, he is a person who fought against apartheid (7) Mandela
2. A former President of India whose birthday is celebrated as Teachers' Day (13) Dr. Sradha Krishnan
4. Youngest Prime Minister of India, also a pilot (5, 6) Rajiv Gandhi
6. Awarded Nobel Prize for Physics in 1930 (1, 1, 5) C. V. Raman
7. First to receive commercial pilot's licence and a legendary businessman (1, 1, 1, 4) J. R. D. Tata
8. Known as Gandhi of the South, awarded Bharat Ratna in 1976 (1, 7) K. Kamaraj

Sub. Teacher's name – Kumari Archana

class-VII To learn Sub – G.K.

 Page no. – 03

3. Taste of India

We all love food. Different states and regions of India have their own unique recipes and style of cooking. Let us travel around the country and 'taste' some mouth-watering delicacies.

Name the state.

1. Let us first drop in to this tiny sea-side state and enjoy some **sannas** (type of idli), **sorpotel** (pork preparation in vinegar) and a sweet dish called **bebinca**. Goa

2. Our next stop is God's own Country. Here we relish a delicious meal of **appam** and **kozierachi** (a coconut-based chicken curry). After that, we enjoy a generous helping of **payasam** (a dessert). Kerala

3. From the south let's travel north, where we enjoy eating **yakhni** (lamb and yoghurt), **roghan josh**, **methi chaman** and a sweet dish called **shufta**. Jammu and Kashmir

Know with Derek

In 1868, Nobin Chandra Das of Bagbazar, Kolkata, is believed to have invented the much loved Rasagulla as we know it today. His son, K C Das started canning them, which led to their even wider availability.

Sub. Teacher's name – Kumari Archan

Class-VII To learn Sub - G.K. Page no. - 04

4. It's Navratri and we are invited for a sumptuous meal of **whagharela bhaat** and **khatta mag**, followed by a sweet dish called **mohanthal**. Gujarat

5. Off to this northeastern state, where we order **jatti lau tenga anja** (fish curry with ridge gourd) and **potato pithika**. To satisfy our sweet tooth we enjoy a bowl of **kamalar paayesh**. Assam

6. This north Indian state serves the best **malai kofta**, **masaledar murgh** and **saag gosht**. And who can forget the delicious **gajar ka halwa**? Punjab

7. Back down south, we have **mulligatawny soup** (a dish made of red lentils and black peppercorns), **chettinad chicken** and **paniyaram** (sweet idli). Tamil Nadu

8. After this, we sit down for a meal of **amrud ki sabzi**, **panchmela ki dal** and **lal maas**, with a decent helping of Gatta pulao. Rajasthan

Know with Derek

Kairi ka Pani (green mango juice) is a popular drink in the north-western states of India.

Sub. Teacher's name - Kumari Arch...

EMMANUEL SCHOOL

By- Ritesh Srivastava

CLASS-7th

Chapter- 2[Nutrition in animal]

BIOLOGY ASSIGNMENT

Q.1 Name the largest gland in human body.
Q.2 Define digestion.
Q.3 Name the part of alimentary canal.
Q.4 Name the gland that secrete digestive juice.
Q.5 The process of taking food into body is called.
Q6. Name different type of teeth.
Q7. Name the mode of feeding of ant and mosquitoes.
Q8. What is location of pancreas?
Q9. Name the end product of carbohydrates.
Q10. Name the end products of fats.
Q11. Define egestion.
Q12. Name the part of digestive canal involved in complete digestion of food.

SHORT Q/A

Q1. What do you mean by animal nutrition?
Q2. What is digestion?
Q3. What are the function of the tongue in human body?
Q4. What are milk teeth and permanent teeth?
Q5. Name the main organs of digestive system.
Q6. Explain tooth decay?
Q7. Glucose is considered as the source of instant energy, why?
Q8. Define peristalsis?
Q9. What are secreted inside the stomach?
Q10. Explain digestive enzymes?

Class-7{bio} by –Ritesh srivastava

ACTIVITIES

1. Draw a labelled diagram of human digestive system.
2. Draw a labelled diagram showing digestive system of cow.

1 Nouns

Warm-up

Write four words for each. One has been done for you in each.

Names of persons	*doctor,*
Names of animals	*antelope,*
Names of things	*sugar,*
Names of places	*hospital,*
Names of ideas / feelings / states	*respect,*

The words you just added are naming words. Words that refer to a person, an animal, a place, a thing, an idea, a feeling or a state are called **nouns**.

For example: Tina, nurse, cheetah, library, house, honesty, laughter, hunger

Kinds of Nouns

Nouns can be classified into different categories and come with their own rules for usage. Let us learn about them.

Kinds of noun	Refers to	Examples
Common noun	persons, places or things in general	woman, table, bird, crow, city, mountain, river, tree, month
Proper noun	a particular person, place or thing	Hema, Vinod, Hyderabad, Himalayas, Yamuna, March
Abstract noun	ideas, qualities, activities or states	danger, friendship, love, time, theft, humour, sleep
Collective noun	groups or collections of the same kind of people or things	class, crowd, herd, shoal, team, audience, fleet, flight

[illegible] the correct category.

[illegible]	aircraft	building	wealth	Monday	rose	kindness
[illegible]	bottle	Mumbai	Godavari	audience	family	bravery
painter	student	bunch	Mahesh	voice	flock	bouquet

Common nouns _____

Proper nouns _____

Abstract nouns _____

Collective nouns _____

Countable and Uncountable Nouns

Countable nouns are nouns that can be counted as separate items. These can be used with *a* or *an*, and with words that denote a number or tell *how many*.

For example:

- a mango
- *an* egg
- *three* children
- *several* houses
- *many* trees

Uncountable nouns cannot be counted as separate items. These could refer to ideas, experiences, some substances, weather and collections. Usually, words such as *much* and *a little* can be used with these.

For example:

- music
- much joy
- sadness
- a little milk
- flour
- a little rain
- winter
- luggage
- much information

Uncountable nouns always take a singular verb.

For example:

- The **rice** is uncooked.
- **Music** cheers up everyone.

B. Write C for *countable* and UC for *uncountable nouns*.

1. requests	2. electricity	3. music
4. advice	5. exercises	6. sand
7. traffic	8. heat	9. time
10. program	11. childhood	12. answer

Singular and Plural Nouns

A **singular noun** refers to *only one* person, place, idea or thing.

For example:

- day
- child
- chair
- hill
- school
- banana

Only countable nouns have a plural form.

For example:

- glasses ✓
- waters ✗
- noses ✓
- airs ✗

A **plural noun** refers to *more than one* person, place, idea or thing.

For example:

- days
- beaches
- women
- offices
- knives
- oranges

Forming the plural of nouns

The plural form of nouns can be formed by adding the suffixes *-s* or *-es*, or by *changing the endings* and *adding suffixes* at the end. Let us read some rules for forming the plurals of nouns.

Rules for change	Examples
add *-s* to regular nouns and to those ending in a *vowel + y*	cars, apples, shoes, days, boys, monkeys
add *-es* to words ending in *-x*, *-ss*, *-sh* or *-ch*	boxes, fishes, bunches
remove the *f / fe* at the end and add *-ves*	leaves, knives, wives
if *-y* follows a consonant, remove the *y* at the end and add *-ies*	babies, parties, ladies, stories, cities

Rules for change	Examples
add *-s* to nouns ending in *-o*	zoos, videos, tattoos
add *-es* to nouns ending in a *consonant + o*	heroes, echoes, potatoes
irregular nouns change spelling or word	men, women, teeth, feet, mice, people
no change	sheep, deer, series

C. Rewrite these sentences using the *plural form* of the nouns in each sentence. You may need to make changes to the verb too.

1. The engineer drove the car out of the garage for testing.
2. A battery in the series has not been connected properly.
3. A student brought a loaf of bread for the class party.
4. The train halt at this station for a short time only.
5. The library in the university is very well stocked.
6. The person was amazed by the trick of the magician.
7. A choir sang along with the teacher at the piano.
8. The Indian team is very good at one-day match.
9. The employee was introduced to the senior in the group company.
10. A mosquito buzzed in my ear as we sat watching the video.

Possessive Form of Nouns

The *possessive form* of a noun is used to show that someone owns something. A *possessive noun* modifies another noun and is placed before the noun it modifies. We form the possessive form of the noun using the apostrophe (') and an *s* generally.

For example:

- Ekta's bicycle
- the gardener's rusted tools

The possessive form of nouns can be formed using the apostrophe in these ways.

singular nouns	add an apostrophe (') and s	Minna**'s** box, man**'s** beard, horse**'s** hooves, bird**'s** beak
singular nouns ending in -s	add just an apostrophe (') or add an apostrophe (') and s	boss' chair / boss**'s** chair, Thomas' house / Thomas**'s** house
plural nouns ending in -s	add just an apostrophe (')	girls' skates, speakers' names, cats' paws, birds' feathers
plural nouns that do not end in -s	add an apostrophe (') and s	women**'s** hair, sheep**'s** wool, mice**'s** tails, people**'s** voice

D. Rewrite these sentences using the *possessive form* of nouns. The first one has been done for you.

1. She is the mother of Gauri.
   She is Gauri's mother.
2. This is the story of Nelson Mandela.
3. What are the names of the singers?
4. The crops of the farmers were destroyed in the floods.
5. Uncle Mukesh is designing the room of the kids.
6. Please do not disturb the nests of the birds in the tree.
7. Let me see the results of this year.
8. I am quoting this from the novel of Dickens.
9. The horns of the deer are called antlers.
10. She is replying to the email of her sister.
11. We are going to attend the performance of the sister of my friend.
12. Could you guide me to the house of the brother of Mr Nathan?

Do not use the possessive marker (') / form with things to show possession.

For example:

- chair's arms ✗
- arms of the chair ✓

The apostrophe can be used to talk about duration and time.

For example:

- I require a **month's** time.
- Let us finalise **tomorrow's** programme.

Gender of Nouns

Some nouns that refer to people and animals change their form or word to show whether the noun is masculine or feminine. This is called the **gender** of the noun.

Nouns that refer to a female are said to be of the **feminine gender**.

For example:

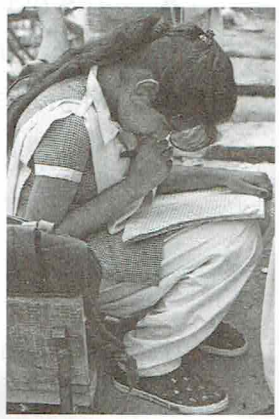
- cat
- woman
- aunt
- mother
- princess
- doe
- hen
- niece
- tigress

Nouns that refer to a male are said to be of the **masculine gender.**

For example:

- tomcat
- man
- uncle
- father
- prince
- buck
- rooster
- nephew
- tiger

Nouns that can be used to refer to both feminine and masculine genders are said to be of the **common gender.**



For example:

- cousin
- student
- friend
- horse
- artist

Some nouns that cannot be classified as masculine or feminine are said to be of **neuter gender.** Nouns that are names of non-living things or objects are classified as neuter gender.

For example:

- computer
- table
- roads
- trees
- air

Forming the gender of nouns

The feminine gender of some nouns can be formed by adding **-ess** at end of the masculine form.

For example:

- prince – princess
- god – goddess

The gender of some nouns are entirely different words.

For example:

- bachelor – spinster
- groom – bride

The gender of compound nouns requires change of a word before or after.

For example:

- milkman – milkmaid
- stepfather – stepmother

The last vowel may have to be dropped in some cases before adding -ess to form the feminine gender.

For example:

- emperor — empress
- tiger — tigress

The current use in language is to use the form of the noun without -ess even for the feminine gender.

For example, the nouns **author** and **poet** are now used for both men and women.

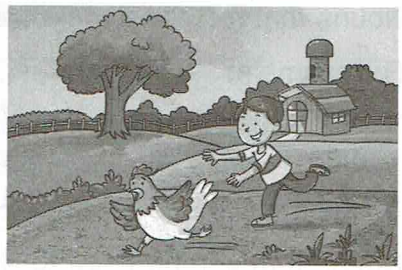
Also, some words that refer to a specific gender are being replaced by neutral forms that can be used to refer to both the feminine and the masculine gender.

For example, the noun **landowner** is used instead of landlord or landlady; the noun **police officer** is used instead of policeman or policewoman.

E. Rewrite these sentences by changing the *gender* of the nouns denoting people and animals.

1. My grandfather took my baby sister to the mall in a perambulator.
2. The bride on the horse is my sister-in-law.
3. The king asked his men to decorate the court.

4. My nephew had fun chasing the big red hen on our farm.
5. I once mistook the mare for a horse.
6. The hostess took good care of her guests.
7. We saw a tiger feeding on a deer carcass during the morning safari.
8. The old widow sat watching the peacocks in the garden.
9. The actress played the role of a waitress in the movie.
10. Mehek's stepmother is a generous woman.



F. Write from the box the neutral form of these nouns in practice these days.

artisan	homemaker	courier	chairperson	principal
humanity	businessperson	native language	expert	police officer

1. policeman _____
2. deliveryman _____
3. chairman _____
4. headmaster _____
5. businessman _____
6. housewife _____
7. craftsman _____
8. mankind _____
9. mother tongue _____
10. master _____

G. Using the nouns given below, write a short story with the theme 'Musicians Bind Animals in Friendship'.

band (of musicians), flight	aircraft crash	safety, treetop	forest, darkness
music assembly	nests, birds	pride (of lions)	pack (of wolves)
herd (of elephants)	togetherness	celebration	friendship

Summary

In this chapter, we have learnt that

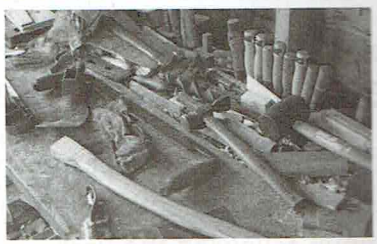
- words that refer to a person, an animal, a place, a thing, an idea, a feeling or a state are called **nouns**;
- **countable nouns** have a plural form; **uncountable nouns** have no plural form;
- the **possessive form** of noun uses an apostrophe (') to show possession by someone;
- nouns can be classified according to their **gender** as masculine, feminine, common or neuter; and
- some nouns that refer to people and animals change their form or word to show **gender**.

2 Noun Functions

Warm-up

Rearrange these groups of words to make meaningful sentences.

1. makes carpenter a furniture
2. a furniture carpenter I to make called
3. some the carpenter gave nails I
4. some furniture by carpenter good was made the



You just rearranged the groups of words with the noun *carpenter* at a different position in each sentence. A noun may be placed as the subject of a sentence, as a direct or indirect object of the verb, or as the object of the preposition.

Let us understand how the noun functions differently at different positions in a sentence.

Noun as Subject

The part of the sentence that tells *who* or *what* the sentence is about is called the **subject**. The subject of a sentence may be a one word noun, a compound subject or a noun phrase with a head noun.

For example:

- **Snakes** can slither up a tree.

  (subject—one-word noun *snakes*)

- A **skilful and intelligent carpenter** makes good furniture.

  (subject—noun phrase with head noun *carpenter*)

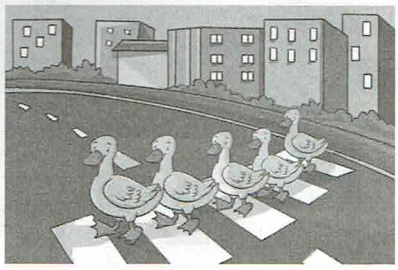
- **Men and women** cooked a meal together.

  (compound subject—*men and women*)

A **noun phrase** is a group of words that acts as noun in a sentence. The headword in a noun phrase is a noun.

A **compound subject** is made up of two or more subjects joined by a coordinating conjunction. The subject may be a compound noun, made up of two or more subjects, joined together by a coordinating conjunction. They share the same predicate.

A. Underline the subject in these sentences.



1. Five ducks waddled across the road.
2. The Shatabdi Express chugged along slowly in the heavy fog.
3. The earliest people used to hunt for food in the forests.
4. This oil has a magical effect on hair.
5. My father looks best in a plain white shirt.
6. The science museum will be redesigned next year.
7. Kanwar and Surbhi will travel to London next month.
8. The engineers in the factory have designed a new car.
9. That constellation in the sky is called Sirius A.
10. The nachos and the caramel popcorn were delicious.

Noun as Direct Object

Sometimes, the subject may be the doer of the action conveyed by the verb in a sentence. In many cases, the action performed by the subject may affect or be received by another noun or pronoun following the verb.

The noun or pronoun that receives or is affected by the action indicated by the verb in a sentence is called the **direct object** of the verb.

For example:

- I called **a carpenter** to make furniture.

  The action indicated by the verb *called* is received by the head noun *carpenter*. So, *carpenter* is the direct object of the verb *called*.

- A carpenter makes **furniture**.

  The action indicated by the verb *makes* affects the noun *furniture*. So, *furniture* is the direct object of the verb *makes*.

- Men and women cooked **it** together.

  The action indicated by the verb *cooked* is received by the pronoun *it*. So, *it* is the direct object of the verb *cooked*.

Direct object answers verb + *whom / what*.

B. Underline the verb and circle the *direct object* in these sentences.

1. Girish always visits his grandparents over the weekend.
2. Raghav and Shireen have bought a new house.
3. Mohan takes his herd of sheep to the pasture every day.
4. The Principal congratulated the football team on their victory.

5. The Chief Guest announced a holiday in his speech.
6. Lucy saw a school of fish in his morning snorkelling session.
7. The contractor asked the labour to clear the construction debris.
8. She visits the senior centre once a week.
9. Zara baked chocolate chip cookies for her classmates.
10. The soldier carried the injured man to the nearest camp.

Noun as Indirect Object

Some verbs take two objects after them—

1. a **direct object** that *receives or is affected by the action* of the verb in a sentence. The direct object is usually a noun, a noun phrase or a pronoun; and
2. an **indirect object** that *receives the direct object*. We can say the indirect object is the person to or for whom the action is done.

Indirect object answers verb + *to* / *for whom* / *what.*

For example:

- I *gave* **the carpenter** some nails.

  The action indicated by the verb *gave* is received by the noun phrase *some nails* (*gave* what? *some nails*); so, *some nails* is the direct object of the verb *gave*.

  The direct object *some nails* is received by *the carpenter* (*gave* to whom?); so *the carpenter* is the indirect object of the verb *gave*.

- Men and women together *cooked* **their children** a delicious meal.

  The action indicated by the verb *cooked* is received by the noun phrase *a delicious meal* (*cooked* what? *a delicious meal*); so, *a delicious meal* is the direct object of the verb *cooked*.

  The direct object *a delicious meal* is received by *the children* (*cooked* for whom?); so, *the children* are the indirect object of the verb *cooked*.

C. Underline the *indirect objects* in these sentences. The first one has been done for you.

1. The hen fed its chicks some corn.
2. Raj built his kids a beautiful sandcastle.
3. The chef cooked the guests a sumptuous meal.
4. The manager offered the peon a handsome salary.
5. My grandfather helped make me a colourful kite.
6. Aunt Leena paid the electrician some money.

The **indirect object** is usually a living being—a person or an animal—to or for whom the action is done.

7. Paula, please pass me the baked beans after helping yourself.
8. The teachers assigned us a new project.
9. My brother gives Bruno a bath once a month.
10. Veena passed Shalini the ball before the batsman had crossed the crease.

Noun as Object of the Preposition

A preposition is a word that is used to show the relationship between two or more people, places or things in a sentence. The noun, noun phrase or pronoun that follows the preposition is the **object of the preposition**.

For example:

- Some good furniture was made by **the carpenter.**
  (The noun phrase *the carpenter* is the object of the preposition *by*.)
- The children waited in **a line.**
  (The noun phrase *a line* is the object of the preposition *in*.)
- The fight landed on **Monday.**
  (The noun *Monday* is the object of the preposition *on*.)

D. Complete these sentences stating facts about a dust storm adding suitable *objects* after the prepositions. You may choose from the box.

respiratory diseases	strong winds	many diseases	poor visibility	their face
dry lands	crops	a dust storm	the houses	dust

1. A dust storm is caused when dust is lifted from _____.
2. The dry dust is lifted by _____.
3. Strong winds blow away the top soil that is needed for _____.
4. High speed winds create huge walls of _____ as they blow.
5. It becomes difficult for people to see anything during _____.
6. People cannot see their own hand in front of _____.
7. It is difficult to keep the dust out of _____ too.
8. Dust storms carry viruses and are known to be the cause of _____.

9. They also worsen the condition of people suffering from _____.
10. Dust storms affect the movement of public and private transport and flights because of _____.

E. Identify the function of the underlined noun phrases in these sentences. Write S for *subject*, DO for *direct object*, IO for *indirect object* and OP for *object of the preposition*.

1. The old villa is now a big, modern mansion.
2. The pilot had to crash-land the plane on the plateau.
3. Hansita knitted her son a woollen scarf.
4. The shopping centre is overcrowded during the festivals.
5. The royal collection of jewels was on display.
6. Somebody broke into the garage through the broken window.
7. The teacher gave us some tricky problems to solve.
8. Jason showed the class his model of an electric train.
9. I sent my brother in London an email.
10. People heard the President's speech sitting around their TV sets.

Summary

In this chapter, we have learnt that

- **direct object** is the noun, noun phrase or pronoun that receives or is affected by the verb;
- **indirect object** is the noun, noun phrase or pronoun that receives the direct object of the verb; and
- **object of the preposition** is the noun, noun phrase or pronoun that immediately follows the preposition.

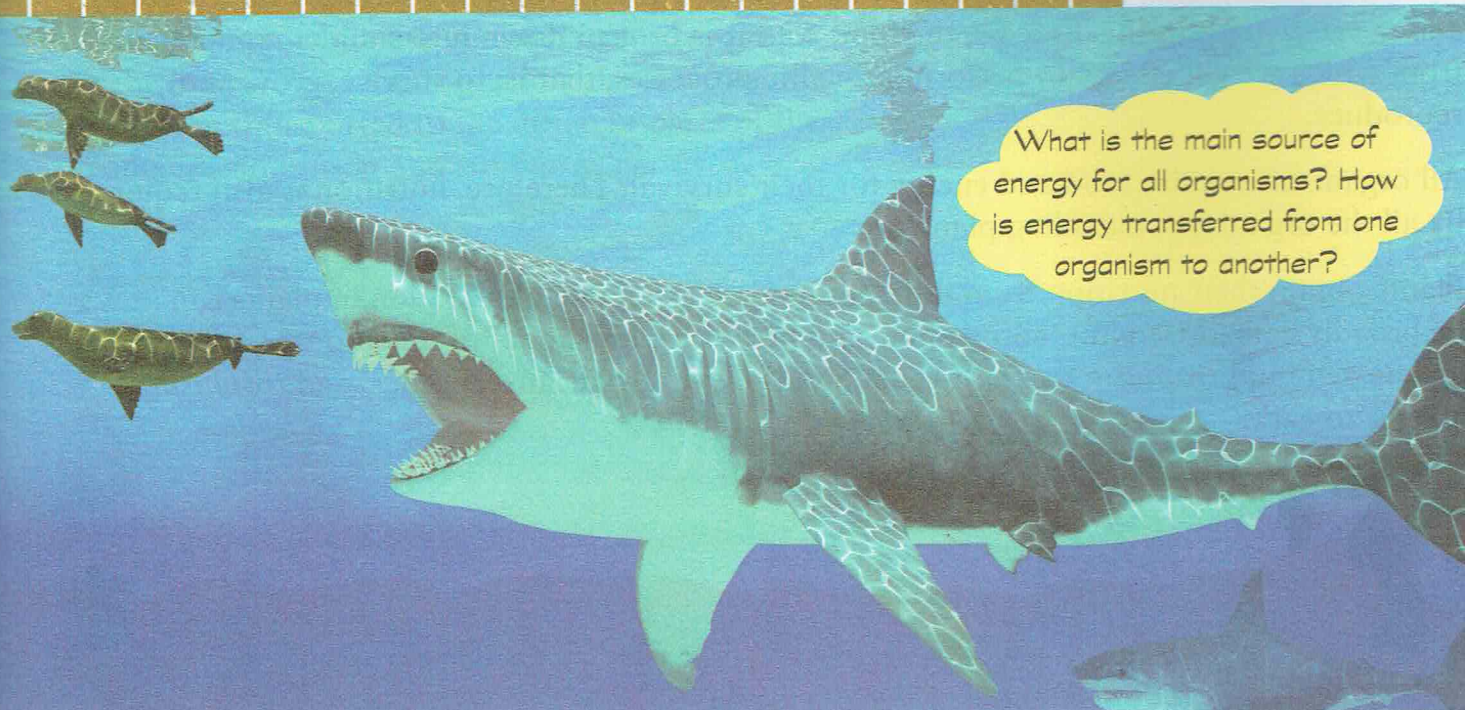
Ch1: Nutrition in Plants

- Describe the types of nutrition in plants.
- List examples of autotrophic and heterotrophic plants.
- Describe the process of photosynthesis.
- Identify various types of heterotrophic plants.
- Learn how nutrients are replenished in the soil.

Ch2: Nutrition in Animals

- Describe the types of nutrition in animals.
- Describe the process of nutrition in animals.
- Learn how nutrition is carried out by *Amoeba*, *Hydra* and frog.
- Identify various organs of the human digestive system.
- Understand ruminant species.

I Wonder!



Chapter

1 Nutrition in Plants

What I Know

Fill in the blanks with the correct word.

1. The process by which green plants make food is called ..... . (**photosynthesis**/**chemosynthesis**)
2. The green pigment present in plants is called ..... . (**chlorophyll**/**chloroplast**)
3. The ..... is called the food factory of the plant. (**leaf**/**root**)
4. The ..... of plants absorb nutrients from the soil. (**stem**/**roots**)
5. Plants give out ..... during photosynthesis. (**oxygen**/**carbon dioxide**)

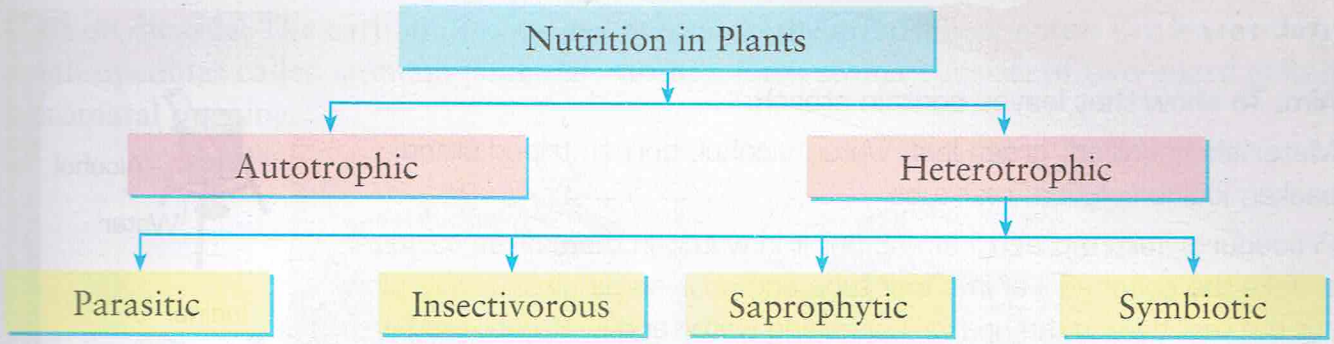
You might have heard people saying that a child is not getting proper nutrition and thus, he or she is weak as compared to other children of his or her age. Hence, our elders advise us to eat nutritious food to stay fit. What is meant by nutritious food? Why should we include different fruits and vegetables in our diet?

PLANT NUTRITION AND ITS TYPES

***Nutrition** is the mode of taking food by an organism and utilising the food for their growth and development.* In this process, the food we eat is broken down into simpler components from which we get energy to perform basic life processes, that is, to survive, grow and reproduce.

All organisms require food and energy for their survival. Therefore, nutrition is also required by all the organisms, including plants.

Plants obtain their nutrition from different modes. The mode of nutrition in plants can be broadly categorised into **autotrophic** and **heterotrophic modes of nutrition**. Here, *auto* means 'self' and *trophism* means 'to eat'. Similarly, *hetero* means 'another' and *trophism* means 'to eat'.



AUTOTROPHIC NUTRITION

All green plants prepare their own food by the process of photosynthesis, and hence are known to have autotrophic mode of nutrition. Plants are therefore called ***autotrophs****.*

As the food is produced in the presence of sunlight (*photo*: light; *synthesis*: combining together), the process is called **photosynthesis**.

$$\underset{\text{Carbon dioxide}}{6CO_2} + \underset{\text{Water}}{6H_2O} \xrightarrow{\text{In the presence of light, Chlorophyll}} \underset{\text{Glucose}}{C_6H_{12}O_6} + \underset{\text{Oxygen}}{6O_2}$$

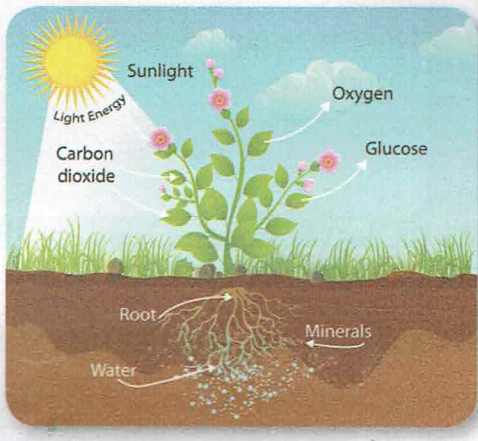


Fig. 1.1 Photosynthesis

The green plants contain a pigment called **chlorophyll**, that gives green colour to the plants. Chlorophyll traps sunlight and stomata takes in carbon dioxide from the atmosphere. The roots of the plants absorb water and minerals from the soil. During the process of photosynthesis, the chlorophyll converts sunlight into chemical energy in the presence of carbon dioxide and water. Glucose and oxygen are the products of photosynthesis. Glucose is stored in the form of starch in the leaves. The food formed by the leaves of the plants are transported to the different parts of the plants for utilisation and storage as per need.

FactAce

Chlorophyll is primarily found in the leaves of plants; however, you can also find chlorophyll in the stem and fruits of plants. The complete body of small plants like algae have chlorophyll, and their entire body takes part in the process of photosynthesis.

FactAce

Apart from leaves, photosynthesis also takes place in other parts of the plant, such as green branches, sepals and green stems. Plants in deserts, such as cactus, have spine-like leaves to reduce the loss of water by transpiration. They have green stems to carry out photosynthesis.

Synthesis: the formation of chemical compounds by carrying out the reaction of simple materials.

ACTIVITY 1

Aim: To show that leaves contain starch.

Materials required: green leaf, water, alcohol, burner, tripod stand, beaker, iodine solution, test tube

Procedure: Take a green leaf and boil it in water, in the beaker, to soften it. Take the softened leaf in a test tube and pour some alcohol in it. Now, put the test tube in the beaker containing water and let it heat on the flame for 2–3 minutes. Boiling in alcohol removes the chlorophyll from the leaf.

Now, take out the leaf from the test tube carefully and wash it with water. Using a dropper, put a few drops of iodine solution on the leaf. Observe what happens.

As the leaves prepare food for the plant and store it, they are called **kitchen of the plants.**

Conditions Necessary for Photosynthesis

The conditions necessary for the process of photosynthesis are:

Chlorophyll: It is the green pigment present in the leaves of the plants. This pigment is located in the chloroplasts in plant cells.

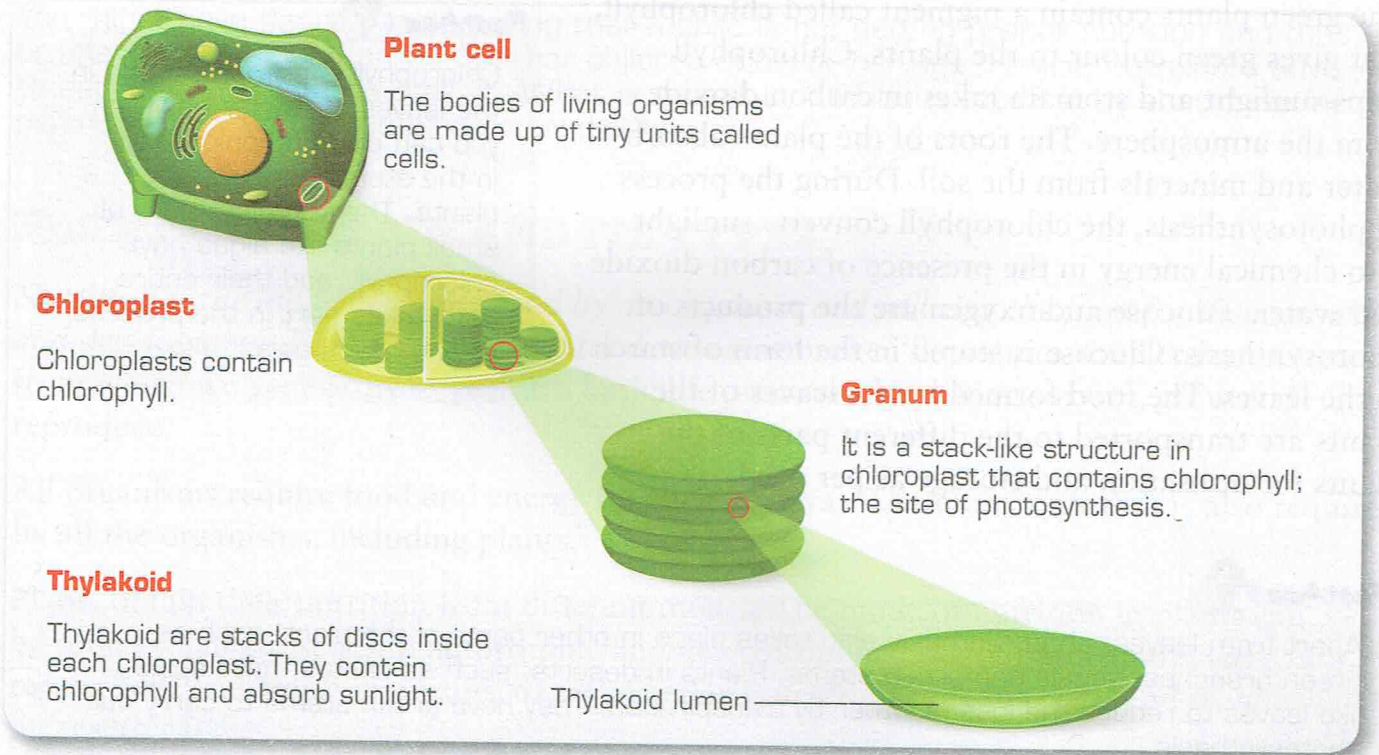
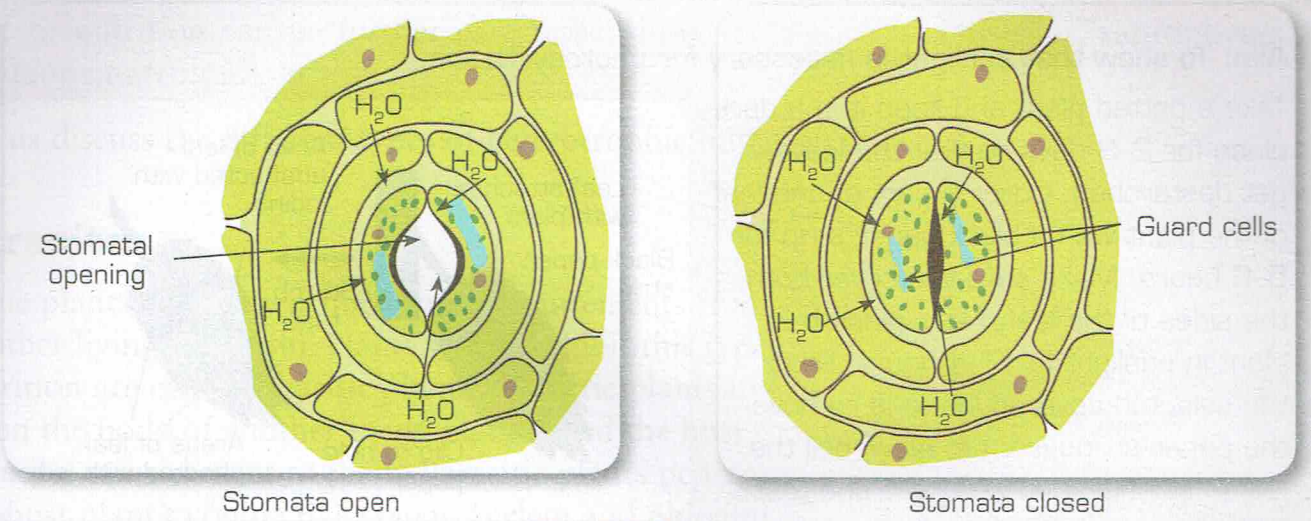


Fig. 1.2 Structure of chloroplast

Teacher's Tip: Students can be made aware, why a water bath is used for heating alcohol.

Carbon dioxide: The carbon dioxide gas present in the atmosphere enters the leaves through small openings called **stomata** (*singular*: **stoma**). Each stoma consists of two guard cells and a stomatal opening.

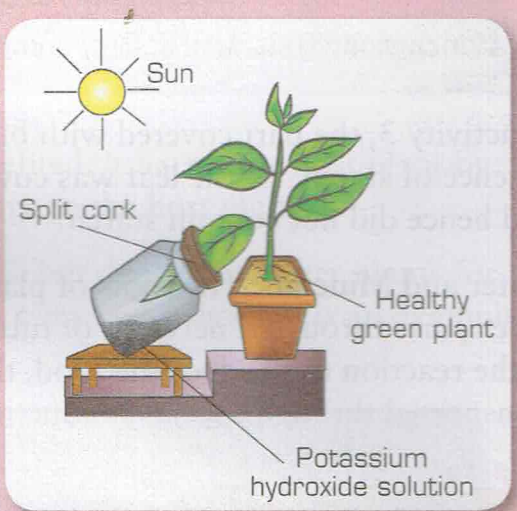


Stomata open Stomata closed

Fig. 1.3 Stomata

ACTIVITY 2

Aim: To show that carbon dioxide is necessary for photosynthesis.



Take a potted plant with long leaves. Keep the plant in a dark room (for about three days) to destarch the leaves.

Take a glass jar, put some potassium hydroxide in it and close it with a split cork. Potassium hydroxide will absorb all the carbon dioxide present inside the jar.

Insert a leaf through the cork so that half of the leaf is outside the bottle and other half inside the bottle. Do not let the leaf break. Keep the plant in sunlight for about 4–5 days.

After 4–5 days, remove the jar and pluck the leaf from the plant. Wash the leaf and test it for the presence of starch.

Observation: You will observe that the part of the leaf which was inside the jar, did not turn blue-black after adding iodine, whereas the other half turned blue-black after adding iodine.

Conclusion: This shows that the part of the leaf inside the bottle did not photosynthesise in the absence of carbon dioxide.

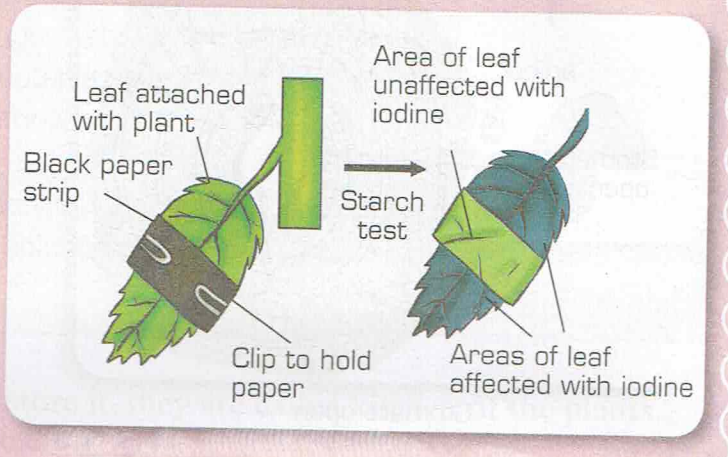
Pigment: a substance whose presence in plant or clerical tissues produces a characteristic colour.

Sunlight: Sunlight is necessary for the process of photosynthesis.

ACTIVITY 3

Aim: To show that sunlight is necessary for photosynthesis.

Take a potted plant and keep it in a dark place for 2–3 days so that the leaves get destarched. Cover a part of one leaf of the plant with a black paper strip for 5–6 hours. Make sure you cover both the sides of the leaf. Now, place this plant in sunlight for 3–4 hours. Pluck the selected covered leaf and remove the paper strips from it. Now, boil the leaf in alcohol as in activity 1 and test it for presence of starch by dropping a few drops of iodine on the leaf.



Observation: You will observe that the part covered with paper strip did not show any colour change, whereas the green parts changed their colour to blue-black.

Conclusion: Thus, this activity shows that sunlight is necessary for photosynthesis.

In activity 3, the part covered with black paper strip did not turn blue-black because of the absence of starch. As the leaf was covered with black paper strip, it did not receive sunlight and hence did not contain starch.

Water and Minerals: The roots of plants absorb water from the soil and transport it to the other parts through a network of tubes called **xylem**. Carbon dioxide combines with water in the reaction to produce the food, that is glucose, along with oxygen gas. The food is then transported through special conducting tubes called **phloem** to different parts of the plants.

CHECKPOINT 1

Fill in the blanks.

1. Nutrition in plants can be broadly categorised into ..... and ..... .
2. ..... are the tube-like structures that transport water from the soil to all parts of the plant.
3. ..... is used to decolourise the leaf.
4. Plants are also called ..... as they make their own food.
5. ..... and ..... are the products of photosynthesis.

HETEROTROPHIC NUTRITION

Plants that cannot prepare their own food and depend on other organisms for their nutrition are known as heterotrophs. *This mode of nutrition is called* ***heterotrophic nutrition***. This type of nutrition can be further categorised into—parasitic, insectivorous, saprophytic and symbiotic nutrition.

Let us discuss the different types of heterotrophic nutrition in detail.

Parasites

Some plants derive their nutritional requirements from another living organism. Plants which exhibit this type of nutrition are called **parasitic plants**. Parasitic plants live in or on the body of another living plant called the **host** that provides nourishment to them. Parasitic plants penetrate the host plant's conductive system (xylem and phloem) with the help of their modified roots, known as **haustoria**. They are capable of absorbing water and nutrients from the host plant. *Cuscuta* is a yellowish plant that is found intertwined on the green plants. Dodder, Australian Christmas tree, dwarf mistletoe and corpse flower are some examples of parasitic plants.

FactAce

Rafflesia is a parasitic plant that has the biggest flower in the world.

In a parasitic relationship, only the parasitic plant is benefited. It harms the host plant by slowing down its growth and thus causing a heavy damage to the host plant.

There are some parasitic plants that make their own food, but depend on other plants for water and other nutrients. These plants are called *partial parasites*. Mistletoe is an example of a partial parasite.

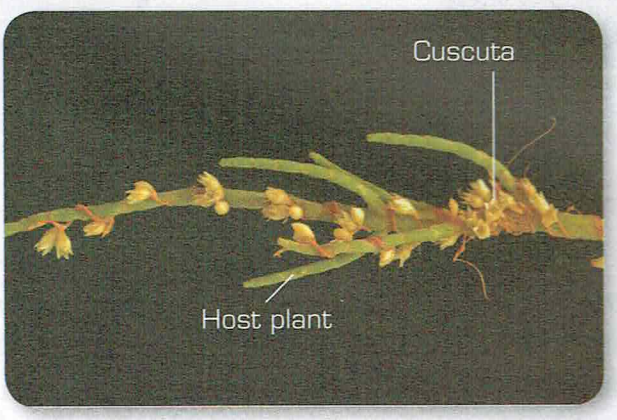


Fig. 1.4 Cuscuta (*Amerbel*)

Fig. 1.5 Mistletoe

Insectivorous Plants

Some plants grow in soil that is deficient in certain important nutrients (such as nitrogen). These plants feed on insects to meet their nutritional requirements, and are called ***insectivorous plants.*** Insectivorous plants have special structures to trap the organisms. They are green in colour and can prepare their own food, but behave as insectivores to fulfil their nitrogen requirement.

Venus flytrap, many types of pitcher plants, bladderwort (*Utricularia*) and sundew plant are some examples of insectivorous plants.

The leaves of **Venus flytrap** are modified to trap insects. Short and stiff hairs are present on the inner surface of leaves. The leaves snap shut when any insect touches the hair.

Pitcher plant has its leaves modified into pitcher-like structures. The pitchers consist of hair that entangles the insects that enter the pitcher. The pitcher secretes some digestive juices that help in digestion of insects.

Bladderworts have pear-shaped bladder structures in their leaves. These act as trapdoors for insects.

Sundew plant leaves have tentacles. Drops of mucilage (a sticky substance) are present at the ends of tentacles. When any insect sticks to the mucilage, it gets trapped and eventually digested.

a. Venus flytrap b. Pitcher plant c. Bladderwort d. Sundew

Fig. 1.6 Insectivorous plants

Saprotrophs

The plants that live on dead and decaying organic matter and derive nutrients from them, are called ***saprophytic plants*** *or* ***saprotrophs.*** Saprotrophs are usually whitish but some plants can have brightly-coloured flowers, often with no leaves at all. They often live in deep shades in tropical forests. They secrete digestive juices on dead and decaying matter to dissolve them and absorb the nutrients. Indian pipe is an example of a saprotroph.

The bacterium known as *Rhizobium* lives in the roots of leguminous plants such as grams, peas and beans. It converts atmospheric nitrogen into nitrogenous forms absorbable to plants. Finally, the soil becomes rich in nitrogen and more fertile. In return, the plant provides food and shelter to the bacteria. This is an excellent example of a symbiotic relationship.

KEY WORDS

Autotroph: An organism that can make its own food

Photosynthesis: The process by which green plants synthesise glucose and release oxygen using carbon dioxide and water, in the presence of sunlight (with the involvement of green pigment, chlorophyll)

Heterotroph: An organism that cannot make its own food and obtains it from other sources

Parasite: Lives on another organism (its host) and benefits by deriving nutrients at the expense of its host

Insectivorous: Feeding on insects, worms, and other invertebrates

Saprotrophs: Fungi, or microorganisms that live on dead or decaying organic matter

Symbiotic: Refers to organisms that live together for mutual advantage

SUMMARY

- Plant nutrition is the study of the chemical elements and compounds necessary for plant growth, plant metabolism and their external supply.
- Autotrophs can produce their own food.
- Heterotrophs cannot produce their own food and rely on other organisms for nutrition.
- Photosynthesis is the process through which plants produce food.
- Heterotrophic plants are of four main types—parasitic, saprophytic, insectivorous and symbiotic.
- Farmers add fertilisers to the soil to maintain the proportion of nutrients in the soil.

What Have I Learnt

I. Objective Type Questions.

A. Tick (✓) the correct answer.

1. Organisms which cannot prepare food for themselves are known as:
   a. autotrophs b. heterotrophs
   c. parasitic d. symbiotic

2. Which of the following is an autotroph?
   a. Dodder b. Sunflower plant
   c. Fungi d. Algae

3. Which of the following is a symbiont?
   a. Lichen b. Sundews
   c. Corpse flower d. Mistletoe
4. Which of the following is not a requirement for carrying out photosynthesis?
   a. Carbon dioxide b. Water
   c. Sunlight d. Thunder
5. Which of the following is not a product of photosynthesis?
   a. Oxygen b. Glucose
   c. Carbon dioxide d. None of these
6. Which of the following is the network of tubes that transport water from roots to other parts of the plants?
   a. Phloem b. Branches
   c. Leaves d. Xylem

B. State whether the following statements are True or False.

1. Plants which can prepare their own food by the process of photosynthesis are known as heterotrophs.
2. Farmers add fertilisers to the soil to maintain the proportion of nutrients in the soil.
3. *Rhizobium* bacteria convert atmospheric argon into argon salt for the soil.
4. Saprophytic plants secrete digestive juices on dead and decaying matter to dissolve them and absorb their nutrients.

C. Unscramble the letters to find the answers.

1. Composite of algae and fungi. (**ENILHCS**)
2. The plants which derive their nutritional requirements from another living plant or animal. (**AICPTIARS**)
3. The plants that have special structures to trap the organisms. (**UIVSCTSIEONRO**)
4. The nutrition in which organisms develop mutual relationship with other organisms to obtain nutrients. (**TSICYBOIM**)
5. The plants which cannot prepare their own food and depend on other organisms for their nutrition. (**CTETEOHPRRHIO**)

D. Fill in the blanks.

1. ..... is the mode of taking food by an organism and utilising the food for their growth and development.
2. ..... is an insectivorous plant that has pear-shaped bladder structure in its leaves.
3. *Utricularia* is an example of a/an ..... plant.
4. ..... is a process of making food by the plants.
5. Plants absorb carbon dioxide from the ....., and water from the soil with the help of their root hairs.

E. Write two examples each for the following:

1. Autotrophic plants
2. Parasitic plants
3. Saprophytic plants
4. Insectivorous plants
5. Symbionts
6. Host plants (of parasites)

F. Match the following:

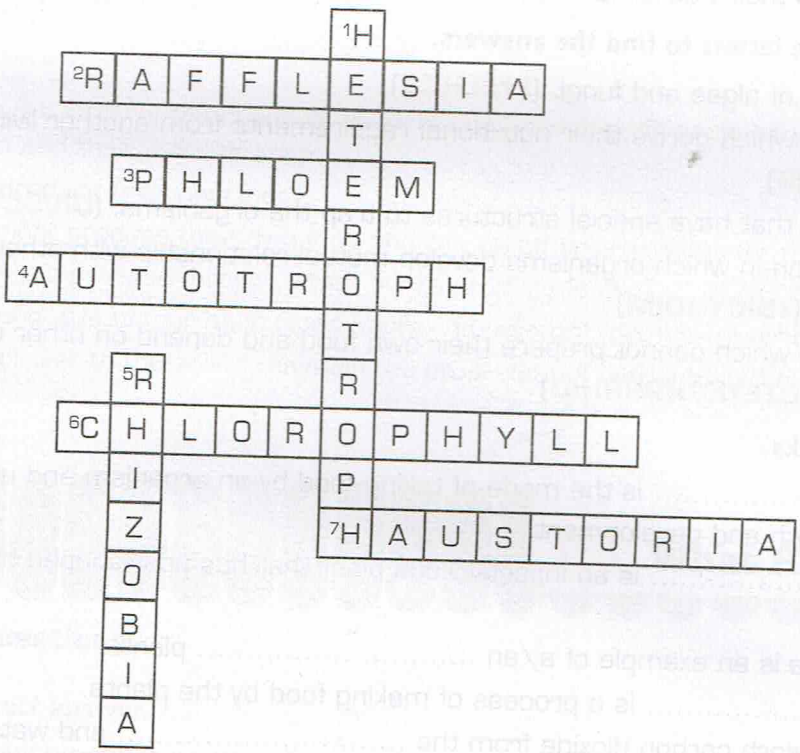
Column I	Column II
1. Photosynthesis	a. modified roots
2. Green pigment	b. insectivorous
3. Haustoria	c. nutrients
4. Bladderworts	d. glucose
5. *Rhizobia*	e. chlorophyll
6. Fertilisers	f. symbiont

G. Circle the odd one out.

1. Mistletoe, Banayan tree, Mango tree, Rose plant
2. Pitcher plant, *Cuscuta*, Sundew, Venus flytrap
3. Carbon dioxide, Chlorophyll, Minerals, Oxygen
4. Mushroom, Venus flytrap, *Cuscuta*, *Neem*

H. Reverse crossword.

Write the clues for the given crossword.

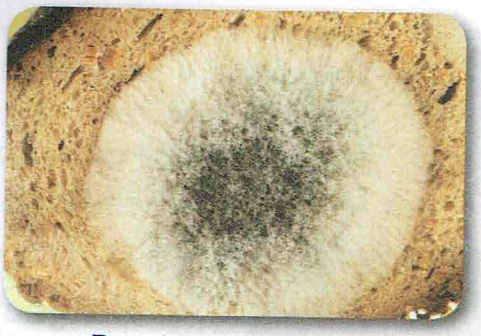


II. Short Answer Questions.

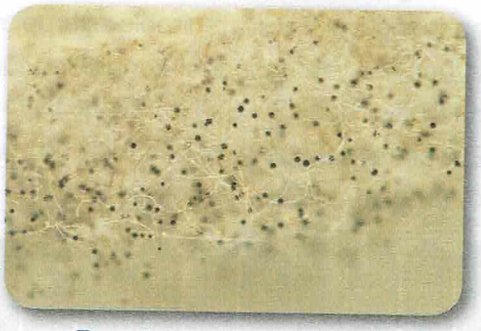
1. What is nutrition?
2. What are the different types of nutrition in plants?
3. What is saprophytic nutrition?
4. List the different types of heterotrophic nutrition.
5. Is oxygen a requirement or a product of photosynthesis? Explain.
6. Which is the main product of photosynthesis?
7. How can plants absorb carbon dioxide from the air?

III. Research/Activity

A. Take a piece of bread and moisten it with water. Leave it in a warm place for 2–3 days. Observe the bread piece and note down your observations every day for a week. Take pictures of the bread piece daily. Paste them in a scrapbook.



Bread mould on bread



Bread mould—magnified

B. Perform an activity.

Aim: To prove that chlorophyll is essential for photosynthesis.

Following steps are performed in a sequential order. You will need a variegated leaf for this experiment. Example, *Coleus*.

Coleus

Step-1: Take a beaker with boiling water and drop a leaf into it. Let it boil for 2 minutes.

Step-2: Take the leaf out of the beaker and place it in a test tube with alcohol. Place this test tube in a hot water bath for 10 minutes. Alcohol decolourises the leaf by removing chlorophyll from it by the process of bleaching.

Step-3: Remove the leaf from alcohol and wash it with warm water. Place it on a tile for further test.

Step-4: Add 2 drops of iodine on to the leaf. The portions which contained chlorophyll turn into bluish-black colour. The portions which did not contain chlorophyll and did not participate in photosynthesis remain the same.

Conclusion: From the experiment, we can infer that green parts of the leaves synthesised starch and non-green parts did not perform photosynthesis.

Precaution: Perform the activity under adult supervision.

C. Hydroponics

The process of growing plants in sand, gravel, or liquid, with addition of nutrients but without soil is referred to as hydroponics.

Make a PowerPoint presentation on 'Hydroponics'. Submit it to your Science teacher.

D. Image Study.

1. Identify the organism.
2. What type of the organism is this?
3. Where does it grow?
4. What does it feed on?

E. Compare a green plant with a mushroom. List two differences and similarities.

GO GREEN!

Scavenger Hunt—Greenhouse

Visit a greenhouse. Find out the answers to the following questions.

1. How do the plants grow in a greenhouse?
2. Find and name:
   a. A plant with big leaves.
   b. A flower that has your favourite colour.
   c. A plant with spines.

Chapter 2

Nutrition in Animals

What I Know

Fill in the blanks with the correct word.

1. ..... is the largest gland found in humans. (**Liver**/**Stomach**)
2. ..... helps the food to reach the oesophagus. (**Pharynx**/**Small intestine**)
3. The food undergoes the process of ..... in the stomach. (**ingestion**/**digestion**)
4. We must eat a ..... diet. (**balanced**/**unbalanced**)

Usually after we play or work hard, we feel hungry. This hunger gets satisfied only after we eat food. But, have you ever wondered why food is so important in our life? What would happen if there is no food? Can we survive without it?

It is impossible for us to survive without food for a long time. Our food contains important nutrients, such as carbohydrates, fats and proteins, that are essential for the growth and development of our body. Similar to human beings, animals also need food to survive. All animals require different nutrients to grow and live. *The process of taking in food and its utilisation in the body for growth and development is called* ***nutrition.***

NUTRITION IN SOME ANIMALS

When we talk about nutrition in animals, we refer to the process by which an animal obtains food, and how the food provides energy and essential minerals to the animal for their growth, maintenance and to perform life sustaining activities. Animals and humans take food in solid form. Such a type of nutrition is generally called **holozoic** and involves the following five steps.

Ingestion → Digestion → Absorption → Assimilation → Egestion

Fig. 2.1 Processes involved in nutrition of animals

Sustaining activities: activities such as eating food and drinking water, which are important for the survival of living beings

Ingestion: *The process of taking in food through mouth by humans or animals is called ingestion.* Method of ingestion may vary from one animal to another.

Digestion: *The process in which complex components of food are broken down into simpler substances is called* ***digestion***. It is noticed that the process of digestion is different among animals.

Absorption: *The process in which the nutrients from the digested food are passed to the blood, to be transported to other parts of the body is called absorption.*

Assimilation: *The process of utilising absorbed nutrients in living tissues is called* ***assimilation***. It fulfils the supply of oxygen, energy and nutrients in the living organisms.

Egestion: *The process in which the undigested food or waste materials are removed from the body is called egestion.*

Nutrition in *Amoeba*

Amoeba is a unicellular organism found in fresh water. It is irregular in shape and does not have a mouth to eat food or a digestive system to digest it. It feeds on microscopic plants and animals through **pseudopodia,** also called **false feet.**

On coming near a food particle, *Amoeba* ingests it by forming an arm or a cup-like structure, known as **pseudopodia,** from its body. When the food is completely encircled by the pseudopodia, a small cavity, called **food vacuole,** is formed. Food vacuole contains several digestive enzymes which help to break the complex parts of the food into simple soluble molecules. The simple soluble food molecules get absorbed and assimilated in the body to obtain energy, growth and repair. The undigested food is thrown out from the body of *Amoeba* through the process of egestion.

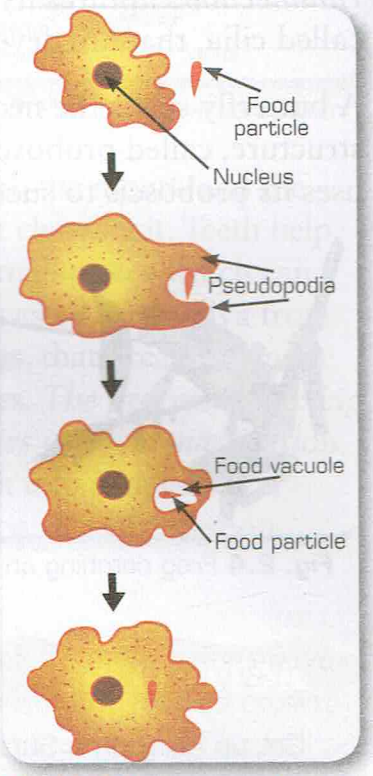


Fig. 2.2 Nutrition in *Amoeba*

Nutrition in *Hydra*

Hydra is a multicellular organism that engulfs its food using the finger-like projections, called **tentacles,** present around its mouth. During feeding, *Hydra* extends its body and tentacles to the maximum length (around 4–5 times of the length of the body) and catches the prey. The prey gets killed and is passed into the mouth. The digestive juices inside the body help in absorption of the digested food by the cavity walls. The food is then assimilated inside the cells.

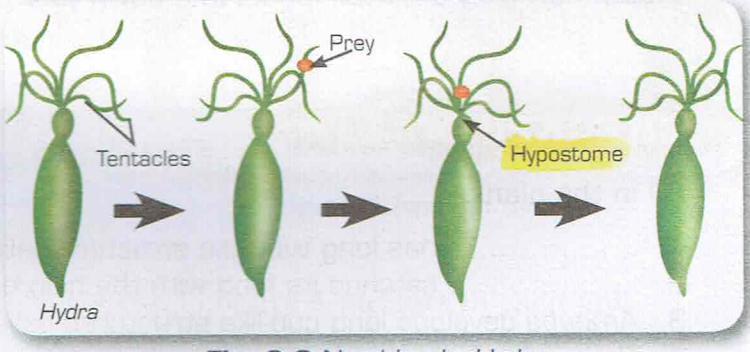


Fig. 2.3 Nutrition in *Hydra*

Hypostome: a mouth part in some organisms, such as *Hydra*

Nutrition in Frog

Frogs catch insects with the help of their sticky tongue. Their tongue is attached to the lower jaw and remains folded in the mouth. As soon as a prey comes near, the frog uses its tongue to catch it and then pulls it inside the mouth. This whole process takes place very quickly. Frogs have a well-developed digestive system which then helps to digest the prey with the help of digestive juices.

Nutrition in Other Organisms

A spider weaves a web in which the insects or preys get trapped. The spider digests the entangled insects by secreting digestive juices and ingesting them in the body of the prey.

Paramecium captures its food with the help of finger-like structures, called **cilia**, that are developed on their body.

A butterfly sucks the nectar from the flowers by using a tube-like structure, called **proboscis**, attached to its mouth. A mosquito also uses its proboscis to suck up the blood of animals and humans.

FactAce

Mosquitoes and butterflies live on liquid food only.

Fig. 2.4 Frog catching an insect

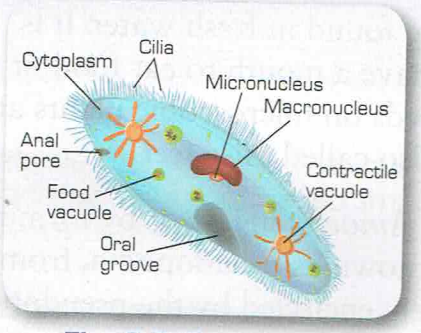


Fig. 2.5 *Paramecium*

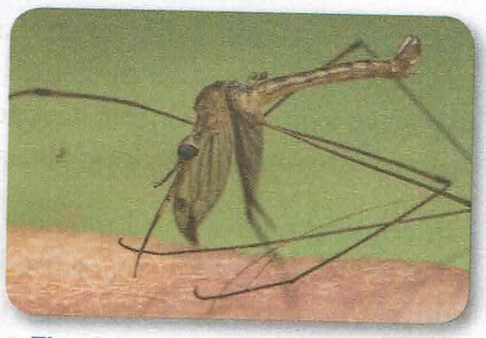


Fig. 2.6 Mosquito sucking blood

ACTIVITY 1

Get up early on a Sunday morning and take a walk in a garden. Observe the various insects or animals such as butterfly, dog, lizard and grasshopper, that you may see in the garden. Watch how they eat their food. Note down your observations.

CHECKPOINT 1

Fill in the blanks.

1. ..... has long tube-like structure called proboscis.
2. ..... catches its food with the help of tentacles.
3. *Amoeba* develops long cup-like structures called ..... to catch its prey.
4. The process of taking in food is called ..... .
5. ..... catches its food by cilia.

HUMAN DIGESTIVE SYSTEM

Like animals, humans also eat and digest their food by following a process. The human digestive system helps to convert the food into nutrients, which are then used by the body for energy, growth and repair. There are various digestive organs which help in the process of food digestion. Let us study about these different parts in the human body which help in the process of digestion.

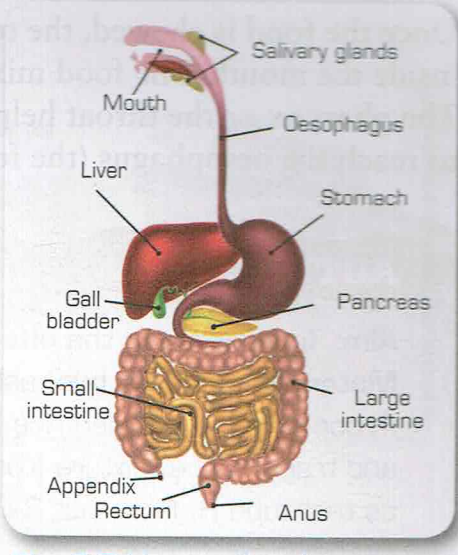


Fig. 2.7 Human digestive system

Mouth

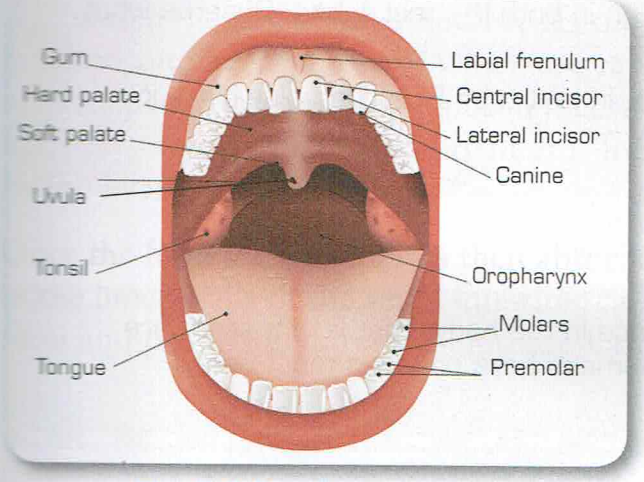


Fig. 2.8 Set of human teeth

The process of digestion starts in the mouth. The food is ingested through the mouth and the digestion begins as we start chewing it. Teeth help in breaking the food into small pieces which can be easily swallowed and digested. The saliva from the mouth contains enzymes, that break down the food into simpler substances. *The process of mixing of saliva with the food pieces is called* ***mastication.*** The saliva breaks the starch into simpler sugar compounds which is the first step of digestion.

Teeth

Human beings need teeth to chew their food before it reaches the stomach. Human beings have four kinds of teeth—incisors, canines, molars and premolars. Each tooth is made up of a crown and some roots embedded in the gums. Only the crown remains visible in the mouth. *The first set of teeth (approximately 20 teeth) in human beings are known as* ***milk teeth.*** The milk teeth appear at the young age of 1 to 5. Later on, as we grow, these are gradually replaced by 32 **permanent teeth** (including 4 wisdom teeth). The teeth help in digesting the food by biting and chewing down the food into smaller digestible pieces.

Fig. 2.9 Types of teeth

Incisors are the front teeth that are used to bite the food. This is why they are also called **biting teeth.** There are 4 incisors in each jaw.

Canines are present adjacent to incisors on both sides of the jaw. They are used to tear the food and hence are called the **tearing teeth.** There are 2 canines in each jaw.

Premolars and **molars** are the next set of teeth that helps in grinding and chewing of food. There are 4 premolars and 6 molars in each jaw.

Teacher's Tip: The students can be told that teeth are made up of enamel, which is the white part of tooth, and is the hardest substance in the body.

Once the food is chewed, the tongue—a muscular organ, helps in pushing down the food inside the mouth. The food mixed with **saliva,** is pushed down to the throat by the tongue. The **pharynx** or the throat helps in sliding down the food inside the body. It helps the food to reach the **oesophagus** (the food pipe).

ACTIVITY 2

Aim: To investigate the effect of saliva on the food.

Materials required: two test tubes, boiled rice, iodine solution

Procedure: Take boiled rice in one test tube. Label it as test tube A. Chew some boiled rice and transfer the mixture from the mouth to another test tube, using a cotton bud. Label it as test tube B. Now, put 2–3 drops of iodine solution in both the test tubes. Observe what happens.

Observation: You will observe that the chewed rice, in test tube B, turned blue-black in colour.

FactAce

Tooth enamel is chemically the most stable substance in the body. That is why teeth are selectively preserved after death. Teeth of ancient humans have provided most useful information for studying the process of evolution.

Stomach

After the food is chewed and swallowed, a muscular, tube-like structure gently pushes the food towards the stomach. Its contractions, known as **peristalsis,** help to deliver the food to the **stomach.** It has a flap known as **valve** which avoids backward movement of the food into the oesophagus.

It is a J-shaped, bag-like structure which acts as a mixer and grinder. The food that we eat stays there from a few minutes to few hours depending upon the type of food that we eat. The stomach walls secrete hydrochloric acid, mucous, digestive juices having many enzymes which carry out the process of breaking down of the food. The hydrochloric acid kills the bacteria which enters along with the food and helps in the digestion of proteins present in the food. The mucous protects the inner lining and the digestive juices break the proteins into simpler substances. In this part, food gets partially digested.

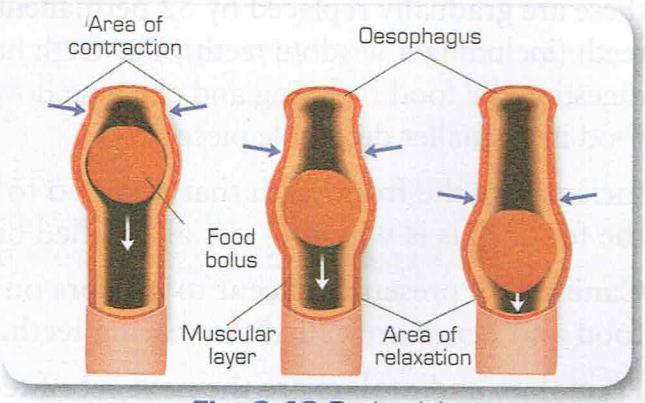


Fig. 2.10 Peristalsis

Evolution: a process in which something passes by degrees to a different stage

Absorption of Food

After the stomach, the partially digested food gradually moves into the small intestine. The small intestine is an approximately 20 feet long winding tube which is loosely coiled in the abdomen. The muscles of the small intestine mix the food with the digestive juices and secrete some juices of their own which help in further digestion. The **liver**, which is the largest gland, releases bile, and the pancreas releases enzymes which also help in the digestion of food. Bile is stored in the **gall bladder** and breaks the fats into simpler compounds which are easier to be absorbed by the body. The **pancreas** secretes **pancreatic juice** that aids in digestion of proteins called **amino acids**. Gall bladder is a pear-shaped, small-sized organ. It is located near the liver. It helps to store bile secreted by the liver.

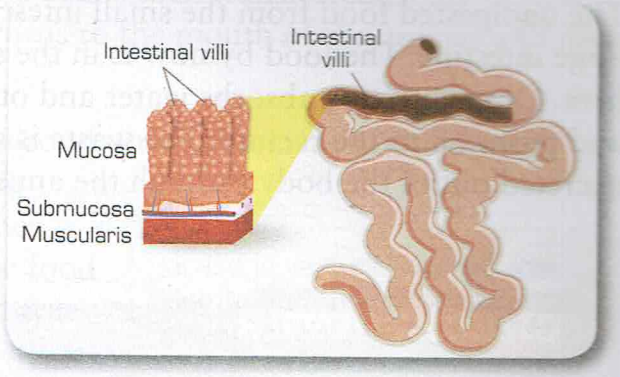


Fig. 2.11 Villi in small intestine

Once the food is digested, it is then absorbed by thousands of small finger-like projections in the inner walls of the small intestine, called **villi**. These villi absorb the nutrients from the food and pass them into the blood capillaries.

Get it Right!

Bile is not a blue fluid. It is produced by the liver and is a dark green to yellowish-brown fluid. It helps in the digestion of lipids in the small intestine.

FactAce

Digestion involves digestive enzymes like amylase, pepsin and trypsin. Amylase breaks down starch to sugar; pepsin and trypsin break down proteins into peptides; lipase breaks down fat, etc.

HOTS

What is ORS? When is it used?

Assimilation

The food and the nutrients that are absorbed in the blood are transported to other parts of the body through the process called ***assimilation.*** The glucose is broken down into carbon dioxide and water in the presence of oxygen in the cells to provide energy. The fatty acids and glycerol get accumulated under the skin and act as energy reservoirs of the body.

Lipid: a type of fatty acid

Egestion

The undigested food from the small intestine is passed to the long muscular tube, called the **large intestine**. The food by now is in the semi-solid state. The process of digestion stops here. Large intestine absorbs water and other necessary nutrients from the undigested food and pushes it to the **rectum**. The waste is stored in the rectum in the form of faeces and is excreted out of the body through the anus. This process is called **egestion**.

CHECKPOINT 2

State whether the following statements are True or False.

1. The process of digestion begins in the mouth.
2. Assimilation of food takes place in the rectum.
3. The villi in small intestine help in absorption of nutrients.
4. There are 6 premolars and 4 molars in each jaw.
5. The process of mixing of saliva with the food is called peristalsis.

HOTS

1. Which is longer—large intestine or small intestine?
2. Which has a lesser diameter—large intestine or small intestine?

NUTRITION IN RUMINANTS

Animals such as cows, goats, deer, buffaloes and giraffes are called **ruminants**.

You must have observed animals, such as cows and goats, swallowing food and then chewing it by bringing it back to the mouth. This partially digested food is called **cud**, and the animals are also known as **cud-chewing animals**. *The cud-chewing hoofed mammals, having a stomach divided into four (occasionally three) compartments are called* ***ruminants****, and the process by which they take their nutrition is called* ***rumination.*** These animals can digest cellulose as they have cellulose-digesting bacteria present in their gut.

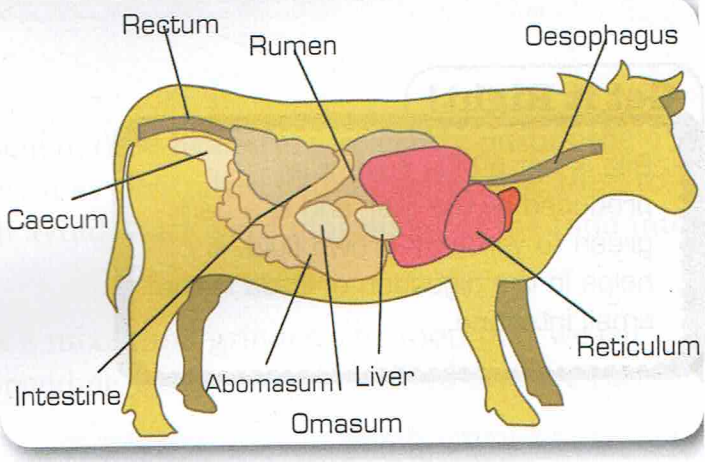


Fig. 2.12 Ruminant digestive system

Ruminants have a complicated digestive system that is characterised by the presence of four chambers—**rumen, reticulum, omasum** and **abomasum.**

I. Objective Type Questions.

A. Tick (✔) the correct answer.

1. Which of the following does not belong to ruminants?
   a. Cow b. Deer
   c. Giraffe d. *Amoeba*
2. Which of these processes is not involved in nutrition?
   a. Egestion b. Circulation
   c. Digestion d. Assimilation
3. Which of the following is a pear-shaped organ?
   a. Gall bladder b. Rectum
   c. Pancreas d. Stomach
4. Which organ is responsible for the secretion of bile?
   a. Small intestine b. Pancreas
   c. Gall bladder d. Liver
5. In which of the following organs (of human beings), does the assimilation food occurs?
   a. Small intestine b. Large intesti
   c. Gall bladder d. Stomach
6. The front teeth in humans are called
   a. Molars b. Incisors
   c. Premolars d. Canines
7. The process through which the food taken in is called:
   a. Digestion b. Absorption
   c. Egestion d. Ingestion
8. A bag-like structure in *Amoeba* in which the food is digested:
   a. Vacuole b. Gall bladder
   c. Intestine d. Stomach

B. State whether the following statements are True or False. Correct the false statements.

1. *Amoeba* is a multicellular organism.
2. Oesophagus is a J-like structure in the human digestive system.
3. Anus is the last part of the digestive system.
4. Enzymes secreted by pancreas help to break down protein, fat and carbohydrate molecules existing in the food we eat.
5. Saliva is secreted by gall bladder.
6. There are 8 molars in the human mouth.
7. The food gets pushed down in the oesophagus through the process called peristalsis.
8. Egestion takes place through large intestine.

C. Unscramble the letters to find the answers.

1. Bag-like structure in digestive system (**MAOSTCH**)
2. White-coloured structures found in the mouth cavity (**ETTHE**)
3. Dark green to yellowish-brown, watery fluid produced by liver (**EIBL**)
4. Storage chamber for undigested food and body wastes (**TCERUM**)
5. The first chamber of the ruminant's digestive system (**RNMUE**)
6. The organ which secretes pancreatic juices. (**SAPNRCEA**)

D. Fill in the blanks.

1. ..... nutrition is the process by which an animal obtains food for its growth and maintenance.
2. ..... fulfils oxygen and nutrients supply in the living organisms.
3. Digestion is the process of breaking down of ..... into simpler substances.
4. *Amoeba* forms some arm-like structures known as ..... .
5. Tentacles are found in ..... organism.
6. The process where the food is absorbed by the body is called ..... .
7. The cud is stored in the ..... chamber until it returns to the mouth.
8. The absorption of food in ruminants occurs in ..... .

E. Find the names of five organs of human body that help in digestion in the given word search.

O	E	S	O	P	H	A	G	U	S
F	M	T	H	R	O	A	T	E	K
V	S	O	N	A	F	P	W	Q	J
J	O	M	O	U	T	H	D	S	L
D	P	A	R	B	E	C	V	G	I
V	R	C	B	D	E	S	H	J	V
J	Y	H	S	T	T	T	I	U	E
T	L	F	K	R	H	A	B	L	R

II. Short Answer Questions.

1. What is the difference between absorption and assimilation?
2. How does *Hydra* capture its food?
3. How does *Amoeba* ingest the food?
4. How does a frog capture its prey?
5. How many types of teeth are there in humans?
6. Name the processes involved in the digestion of food in humans.
7. What is the role of pharynx in the digestive system?
8. What is rumination?

III. Long Answer Questions.

1. How is nutrition carried out in *Hydra* and frog?
2. Draw a well-labelled diagram to depict nutrition in *Amoeba*.
3. Write the role of the small intestine in the human digestive system.
4. What happens to the undigested food in the human body?
5. Write about the role of stomach in the human digestive system.
6. Explain the digestive system in the ruminants with a well-labelled diagram.

Subject Connect

Geography

In rainy season, we can find frogs jumping around. Ants are seen moving here and there. Observe behaviour of some animals in your neighbourhood and fill the details in a table under the following headings—S.No., Name of the animal, Where you saw it, One characteristic feature.

Enrichment Activities

I. HOTS

A. Which type of carbohydrate can be digested only by ruminants but not by humans? Explain the reason.

B. Is it possible for human beings to survive only on leafy vegetables and fruits? Justify the answer.

C. How do lizards and snakes trap their prey?

D. How is food obtained by a mosquito?

E. Do villi increase or decrease the surface area for absorption of food? What do villi contain—tissue or blood vessel?

F. Does *Amoeba* have an anus?

G. Where is the caecum located in the body of ruminants?

H. How do grass-eating animals digest cellulose?

II. Connect to Life

In our lifetime, we get two sets of teeth—temporary set and permanent set. Temporary set of teeth are the ones that we get from infancy till we attain the adulthood. These teeth fall off and new and permanent teeth take their place.

Tick (✓) Yes or (×) No.

1. Do you brush two times in a day to protect your teeth from germs? **Yes / No**
2. Your teeth are white in colour. **Yes / No**
3. Do your teeth pain or bleed? **Yes / No**
4. Teeth are fixed into the gums. **Yes / No**

Have a class discussion on your findings.

III. Research/Activity

Visit a dentist and find about the dental diseases, their causes and prevention. Prepare a presentation and share it with your classmates.

TEST PAPER 1

I. Very Short Answer Questions.

A. Fill in the blanks.

1. Chlorophyll is primarily found in the ..... of the plant.
2. .....is the network of tubes to transport water and minerals to the parts of a plant.
3. The nutrition in animals is generally called ..... .
4. The frog has a ..... tongue to catch the insects.
5. Front teeth that help in biting the food are called ..... .
6. ..... is an example of partial parasite.
7. Plant-eating, cud-chewing animals are also called ..... .
8. The bacterium living in the roots of leguminous plants is called ..... .

B. State whether the following statements are True or False.

1. Photosynthesis is a process through which plants prepare their food.
2. Ruminants have a complicated digestive system.
3. *Hydra* has a sticky tongue to grab the prey.
4. An adult human has 36 permanent teeth.
5. *Amoeba* is a multicellular organism found in fresh water.

II. Short Answer Questions.

1. What are amphibians?
2. Name any two unicellular animals.
3. Define heterotrophs.
4. Give four examples of parasitic plants.
5. Name the process in which complex components of food are broken into simpler substances.
6. By which tube-like structure, does a butterfly suck the nectar from the flowers?
7. Write four examples of autotrophic plants.
8. Which organ stores the bile secreted by liver? Explain it briefly.

III. Long Answer Questions.

1. What is the importance of photosynthesis? Explain.
2. Show, with the help of an experiment, that sunlight is essential for photosynthesis.
3. Write a detailed note on symbiotic plants, based on their relationship and nutrition.
4. Write a note on the holozoic nutrition in animals. Explain all the steps.
5. Explain human digestive system with the help of a labelled diagram.
6. Write a detailed note on the nutrition in ruminants.

IV. Give Reasons.

1. The process of digestion starts in the mouth.
2. If you keep a bread loaf in the open for a few days, fungus grows on it.
3. Sunlight is essential for growth of a plant.
4. Lichens are said to have symbiotic relationship.
5. Cow is a cud-chewing animal.
6. Food gets partially digested in the stomach.

Unit 2: Materials

Ch3: Fibre to Fabric

- Describe the type of natural fibres
- Compare plant and animal fibres
- Recall the definition of sericulture
- Learn how we get wool from sheep
- Discuss the life cycle of silk
- Discuss health hazards of silk and wool industries

Ch4: Heat and Temperature

- Recall the definition of heat
- Learn how heat is transferred through various ways
- Describe various types of temperature scales
- Compare various types of temperature scales
- Solve numerical problems based on temperature scales

Ch5: Physical and Chemical Changes

- Classify the changes around us—physical and chemical
- Understand the characteristics of physical and chemical changes
- Explain the types of chemical reactions

Ch6: Acids, Bases and Salts

- Recall the definition of acids, bases and salts
- Compare various types of acids and bases
- Write the properties and uses of acids and bases
- Give examples of acids, bases and salts
- Explain the properties and uses of salts

I Wonder!

असाइनमेंट – 1 विषयः संस्कृत व्याकरण कक्षा – VII

पाठ सुबन्त और तिङन्त – वचन, विभक्ति, कारक, लिङ्ग, पुरूष, लकार।

(अभ्यास)

१. वचन की परिभाषा तथा भेद उदाहरण के साथ लिखें।
२. संस्कृत में कुल कितने लकार है ? कौन–कौन ?
३. लिङ्ग की परिभाषा तथा भेद उदाहरण सहित लिखें।
४. पुरूष की परिभाषा देते हुए उसके तीनों भेद उदाहरण सहित लिखें।
५. कारक किसे कहते हैं ? ये कितने प्रकार के होते हैं ?

असाइनमेंट – 2 विषयः संस्कृत व्याकरण कक्षा – VII

पाठ – वर्ण–विचार

(अभ्यास)

१. वर्ण की परिभाषा उदाहरण के साथ लिखें।
२. स्पर्श, अन्तःस्थ तथा ऊष्म व्यंजन के दो–दो उदाहरण लिखें।
३. वर्णो को मुख्यतः कितने भागों में बाँटा गया है ? उनकी परिभाषा के साथ लिखें।
४. संस्कृत में स्वरों तथा व्यंजनों की संख्या बतलाएँ।
५. निम्नलिखित का उच्चारण स्थान बताएँ।
अ, क, प, य, ए

असाइनमेंट – 3 विषयः संस्कृत व्याकरण कक्षा – VII

शब्द रूपावली – देव, गृहम्, रमा, मति, नदी।
धातु रूपावली – अस्, भू, ज्ञा, दा, कृ। (पाँचों लकारों में)
गणना – 1 से 50
अनुच्छेद – क) अस्माकं विद्यालयः ख) रामायणम्

Assignment – 1 **Sub: Mathematics** Class: VII

Unit – 1 (Integers)

Counting numbers – 1,2,3,4,5..... etc are natural numbers.

Whole numbers – All natural numbers together with 0 are called whole numbers.

Thus 0,1,2,3,4,5..... etc are whole numbers.

Integers – All natural numbers, 0 and negatives of counting numbers are called integers.

Thus –4, –3, –2, –1, 0, 1, 2, 3, 4 ..... etc are all integers.

+ ve integers –: 1,2,3.... etc.

– ve integers –: –1, –2, –3, ...etc.

O is neither + ve nor negative.

Absolute value of integers – The absolute value of a nonzero integer is always + ve and absolute value of zero is zero. The absolute value of x is denoted by $|x|$.

Thus – $|2| = 2$; $|0| = 0$; $|-3| = 3$

Thus – $|x| = x$ if $x \geq 0$

$-x$ if $x \leq 0$

$|0| = 0$ or -0

Number line – Number line is a line on which integers in ascending order are represented by points from left to right and integers in descending order are represented by points from right to left.

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PRACTICE PAPER FOR CLASS: VII
SUBJECT: CIVICS

LESSON:-1

DEMOCRACY AND EQUALITY

In this chapter, you will be able to learn
* Democracy * Equality in Democracy

Democracy: In the modern age, democracy is the most favoured form of government in the world. The word 'democracy' means – rule by the people. It comes from two Greek words - **demos** (People) and **Cratia** (rule). Democracy is a form of government in which the people govern themselves. In the 1860s, President Abraham Lincoln of the USA defined democracy as "Government of the people, by the people, for the people." Many countries of the world have democratic form of government. Our own country is a democratic Republic. The form of government in our country is representative democracy in which the people govern themselves through their representatives. **Franchise:** A democratic government work through a system of voting through a fixed voting age. In India, the voting age is 18 years. In representative democracy citizens who have reached the voting age are allowed to vote in elections to choose representative who will form the government.

Regular Elections: In a democratic country, the government is formed for a fixed period of time. After that, there are fresh elections. **Political parties:** A political party is an organisation of people who have similar views on political issues.

Equality in Democracy: It is often said that there is no democracy without equality. Hence, in most democratic countries, all citizens are given equal right at least formally. The laws are usually the same for all citizens, and the **rule of law** ensure that nobody, not even the government, is above the law.

Find out:

a. What is democracy?
b. What do you mean by equality in democracy?
c. What is the form of government in our country?
d. Write notes of the following:
   i. Political Parties
   ii. Franchise

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PRACTICE PAPER FOR CLASS: VII
SUBJECT: GEOGRAPHY

LESSON: 1
THE EARTH'S STRUCTURE AND LAND FORMS

In this Chapter, you will be able to learn
* Environment * Structure of the Earth * Rocks
* Development of Landforms

Environment: The earth is the only planet in the solar system that supports life. This is because conditions suitable for life are found only on the earth. However the conditions are not the same everywhere on the earth. It is hot at some places, while at others it is cold." The physical and biological conditions in which an organism lives make up its environment." You know that the Earth can be divided into three zones or sphere - the lithosphere (sphere of rock), the hydrosphere (sphere of water) and the atmosphere (sphere of air). Life exist only in some parts of these sphere. The parts of different sphere in which life exists together form the biosphere.

Structure of the Earth: We know that the earth consists of three concentric layers - the crust, the mantle and the core.

Rocks: rocks may be of three types - igneous, sedimentary and metamorphic

Development of Landforms: We will study some processes that create or modify landforms

- Volcanoes - A volcano is a vent, or an opening, at a weak spot in the earth's crust through which magma erupts onto the surface as Lava.
- Tectonic processes - The earth's lithosphere is broken up into several pieces, just like the pieces of large jigsaw puzzle. These pieces, known as plates.
- Earthquakes - An earthquake is a sudden and violent shaking of the earth's surface. The point at some depth below the earth's surface where the vibrations of an earthquake begin is called **focus**. The point on the earth's surface that lies directly above the focus is called epicentre. The instrument used for recording and measuring the vibrations of an earthquake is called a **seismograph**.

Find out:

a. What is environment?
b. Name the layers of the earth.
c. What is biosphere?
d. How many kinds of rocks are there?
e What are tectonic plates?
f. What is focus?
g. What is epicentre?
h. Name the instrument we to measure the intensity of earthquake.
i. What is a Volcano?

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