

MOUNT CARMEL PUBLIC SCHOOL

Session-2020-2021

Class VII Solutions

Date – 21.04.2020



**MOUNT CARMEL
PUBLIC SCHOOL**

A Step towards excellence....

✓ **PLAY GROUP (PG) / NURSERY**
✓ **KINDERGARTEN (KG)**
✓ **CLASS I TO CLASS VII (UP TO CLASS X)**
An English Medium Co-education School | CBSE Pattern

FACILITIES

- STATE OF THE ART CAMPUS (WITHIN 3 YEARS)
- CBSE STUDY PATTERN
- PRINCIPAL/ TEACHERS FROM OTHER STATES
- ADVANCE COMPUTER LAB FOR STUDENTS
- CENTRALIZED AIR CONDITION CLASSROOMS
- SMART CLASSES
- CLASSROOM MONITORING THROUGH CCTV
- PICK & DROP FACILITY
- RO WATER FOR STUDENTS
- SCHOLARSHIP FOR MERITORIOUS STUDENTS
- NTSE/ OLYMPIAD PARTICIPATION
- YOGA & MEDITATION
- PHYSICAL TRAINER FOR STUDENTS
- DANCE, ART & CRAFT, MUSIC

**ADMISSION
STARTS
(LIMITED SEATS)**

PLAY GROUP/ NURSERY & KINDERGARTEN
↑ **ONLY 25 SEATS PER CLASS**

CLASS I TO CLASS VII (UP TO CLASS X)
↑ **ONLY 30 SEATS PER CLASS**

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Subject – Science

Nutrition in Plants

- Synthesis of plant food other than carbohydrates

Carbohydrates are made up of three substances:

1. Carbon
2. Hydrogen
3. Oxygen

These are used to synthesize or prepare other food components such as :

- Proteins
- Fats

❖ Proteins

PROTEIN IN Plant FOODS



- Proteins are nitrogenous substances which contain nitrogen.

How plants get nitrogen?

- Nitrogen is present in abundance in gaseous form in the air.
- However, plants cannot absorb nitrogen in this form.
- Soil has certain bacteria that convert gaseous nitrogen into a usable form and release it into the soil.
- These are absorbed by the plants along with water.

- Farmer also use fertilizers rich in nitrogen to the soil
- Plants can then synthesise proteins and vitamins.

➤ OTHER MODES OF NUTRITION IN PLANTS

There are some plants which do not have chlorophyll.

They use the heterotrophic mode (depend on other for their food) of nutrition

There are two types of Heterotrophic plants :

1. Parasite
2. Insectivorous

1. Parasite -

you see a yellow wiry branched structure twining around the stem and branches of a tree?

- This is a plant called Cuscuta (Amarbel).
- It does not have chlorophyll.
- It takes readymade food from the plant on which it is climbing.
- The plant on which it climbs is called the **host**.
- Since it deprives the host of valuable nutrients, Cuscuta is called the parasite

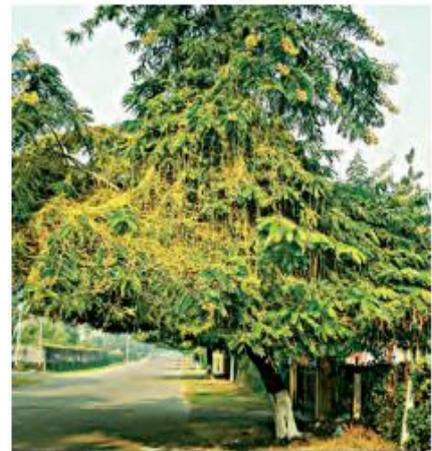


Fig. 1.5 Cuscuta (Amarbel) on host plant

How you feel when you are so hungry and someone ate your cooked food while living on your body and stops your grow...That someone is parasite

2. Insectivorous Plants

There are a few plants which can trap insects and digest them. Is it not amazing?

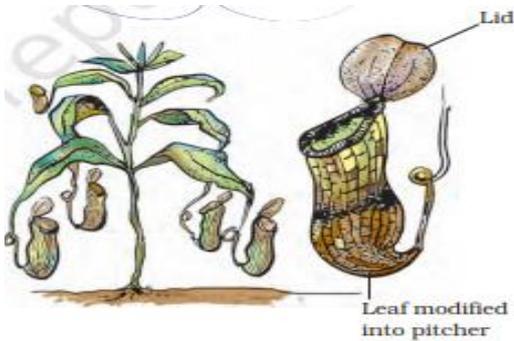


Fig. 1.6 Pitcher plant showing lid and pitcher

- The apex of the leaf forms a lid which can open and close the mouth of the pitcher.
- Inside the pitcher there are hair which are directed downwards.
- When an insect lands in the pitcher, the lid closes and the trapped insect gets entangled into the hair.

- The lid closes and the insect is trapped. The insect is digested by the digestive juices secreted in the pitcher and its nutrients are absorbed.

➤ *Such insect-eating plants are called insectivorous plants.*

➤ Exercise

1. Carbohydrates are made up of *Carbon, Hydrogen and oxygen.*

2. Protein and fats are synthesized by the help of *Carbohydrate.*

3. Proteins contain *Nitrogen.*

4. How do plants get nitrogen?

Plants get nitrogen which is absorbed in soil (by some bacteria and by the use of fertilizers rich in nitrogen) through roots.

5. Write short notes on

a) Parasite – Parasites are those plants which are unable to synthesize their own food by the process of photosynthesis due to the absence of chlorophyll in them. They live on other plants and depend on their food. They make plants get deprived of essential nutrients.

Eg. cuscuta

b) Host

Hosts are the plants on which parasites live and depend for their own food. Hosts are deprived of nutrients and do not grow adequately. As food produced by the host plant is taken by the parasite.

c) Insectivorous plants

Some plants shows heterotrophic mode of nutrition may be partly as they may not fulfil their requirement of nutrients by the process of photosynthesis alone.

To complete their requirements they depend on others for their food.

Generally they have some modified parts which are capable of trapping insect.

These insects are digested by the plants to use their nutrition.

Such plants are known as Insectivorous plants.

Eg. Pitcher plant.

Subject – Mathematics

Integers

➤ PROPERTIES OF ADDITION AND SUBTRACTION OF INTEGERS

1. Closure Property

a) Closure under Addition.

$$\begin{array}{ccccccc} \mathbf{a} & + & \mathbf{b} & = & \mathbf{c} \\ \text{An Integer} & & \text{An Integer} & & \text{An Integer} \end{array}$$

If **a** is an integer **b** is an integer and its sum **c** is also an integer then, we can say that –

“Integers are closed under addition”

Eg.

$$\begin{array}{ccccccc} \mathbf{-2} & + & \mathbf{3} & = & \mathbf{1} \\ \text{An Integer} & & \text{An Integer} & & \text{An Integer} \end{array}$$

b) Closure under Subtraction.

$$\begin{array}{ccccccc} \mathbf{a} & - & \mathbf{b} & = & \mathbf{c} \\ \text{An Integer} & & \text{An Integer} & & \text{An Integer} \end{array}$$

If **a** is an integer **b** is an integer and its difference **c** is also an integer then, we can say that –

“Integers are closed under subtraction”

Eg.

$$-2 - 3 = -4$$

An Integer

An Integer

An Integer

2. Commutative Property

a) For Addition

If two integers say a and b give same result of addition when taken in any order as stated below :

$$a + b = b + a$$

then we can say that –

“Addition is commutative for Integers”

For eg.

$$3 + (-4) = (-4) + 3 = -1$$

b) For Subtraction

take some example

$$\begin{aligned} (-6) - 5 &= 5 - (-6) \\ -11 &\neq 11 \end{aligned}$$

Therefore we can say that

$$a - b \neq b - a$$

(not equal to)

So, we can say that *“subtraction is not commutative for integers”*

3. Associative Property.

a) For Addition

observe the following example.

$$7 + (-9) + 3$$

This can be solve using two different approach

$\{7 + (-9)\} + 3$	or	$7 + \{(-9) + 3\}$
In this sum 7 and (-9) grouped together		In this sum (-9) and 3 grouped together
$-2 + 3$	or	$7 - 6$
1	=	1

Threrefore , we can say that

For 3 integers ***a, b and c***

$$\{a + b\} + c = a + \{b + c\}$$

“Addition is Associative for integers”

b) For Subtraction

observe the following example.

$$7 - (-9) - 3$$

This can be solve using two different approach

$\{7 - (-9)\} - 3$	or	$7 - \{(-9) - 3\}$
In this difference of 7 and (-9) grouped together		In this difference of (-9) and 3 grouped together
$15 - 3$	or	$7 - (-12)$
12	≠	19
	(Not equal to)	

Therefore , we can say that

For 3 integers a, b and c

$$\{a - b\} - c = a - \{b - c\}$$

“Subtraction is not Associative for integers”

➤ Additive Identity

zero is an additive identity for integers as by adding zero to any integer we get same integer

$$a + 0 = a$$

where a is any integer

➤ Exercise

1. Complete the following table

Where a,b and c are any integer

S No.	Property	Operation	In general and Examples	Statement
1.	Closure	Addition	$a + b = c$ $5 + (-2) = 3$	Integers are closed under Addition
		Subtraction	$a - b = c$ $5 - 2 = 3$	Integers are closed under Subtraction
2.	Commutative	Addition	$a + b = b + a$ $4 + 5 = 5 + 4$	Addition is commutative for Integers
		Subtraction	$a - b \neq b - a$ $4 - 5 \neq 5 - 4$	Subtraction is not commutative for Integers
3.	Associative	Addition	$a + (b + c) = (a + b) + c$	Addition is associative for Integers
		Subtraction	$a - (b - c) \neq (a - b) - c$	Subtraction is not associative for Integers

2. Take any 3 integer and show how addition is associative for integers?

Let three integers are : 7, (-5) and 8

Now applying associative property of addition

$$\begin{aligned} \{7 + (-5)\} + 8 &= 7 + \{(-5) + 8\} \\ 2 + 8 &= 7 + 3 \\ 10 &= 10 \end{aligned}$$

Since L.H.S = R.H.S

Therefore, we can say that "addition is associative for integers"

3.

TRY THESE

1. Write a pair of integers whose sum gives

(a) a negative integer (b) zero

(c) an integer smaller than both the integers. (d) an integer smaller than only one of the integers.

(e) an integer greater than both the integers.

2. Write a pair of integers whose difference gives

(a) a negative integer. (b) zero.

(c) an integer smaller than both the integers. (d) an integer greater than only one of the integers.

(e) an integer greater than both the integers.



1. a) Pair of integers whose sum gives a negative integers are 2 and (-8)

$$2 + (-8) = 2 - 8 = -6(\text{negative integers})$$

b) Pair of integers whose sum gives zero are 2 and (-2)

$$2 + (-2) = 2 - 2 = 0(\text{Zero})$$

c) Pair of integers whose sum gives an integer smaller than both the integer are (-2) and (-8)

$(-2) + (-8) = -2 - 8 = -10(\text{smaller than both integer})$

d) Pair of integers whose sum gives an integer smaller than only one integer are 3 and (-8)

$3 + (-8) = 3 - 8 = -5$ (smaller than only one integer 3)

e) Pair of integers whose sum gives an integer greater than both the integers are 3 and 8

$3 + 8 = 11$ (greater than both the integer)

2. a) Pair of integers whose difference gives a negative integers are 2 and 8

$2 - 8 = -6$ (negative integers)

b) Pair of integers whose difference gives zero are 2 and 2

$2 - 2 = 0$ (Zero)

c) Pair of integers whose difference gives an integer smaller than both the integer are 2 and 8

$2 - 8 = -6$ (smaller than both integer)

d) Pair of integers whose difference gives an integer smaller than only one integer are (-9) and (-3)

$(-9) - (-3) = -9 + 3 = -6$ (smaller than only one integer -3)

e) Pair of integers whose difference gives an integer greater than both the integers are (-3) and (-8)

$-3 - (-8) = -3 + 8 = 5$ (greater than both the integers)

4.

EXERCISE 1.2

- Write down a pair of integers whose:
 - sum is -7
 - difference is -10
 - sum is 0
- Write a pair of negative integers whose difference gives 8 .
 - Write a negative integer and a positive integer whose sum is -5 .
 - Write a negative integer and a positive integer whose difference is -3 .
- In a quiz, team A scored $-40, 10, 0$ and team B scored $10, 0, -40$ in three successive rounds. Which team scored more? Can we say that we can add integers in any order?
- Fill in the blanks to make the following statements true:
 - $(-5) + (-8) = (-8) + (\dots\dots\dots)$
 - $-53 + \dots\dots\dots = -53$
 - $17 + \dots\dots\dots = 0$
 - $[13 + (-12)] + (\dots\dots\dots) = 13 + [(-12) + (-7)]$
 - $(-4) + [15 + (-3)] = [-4 + 15] + \dots\dots\dots$



1. Solution:

- Let us take a pair of integers -3 and -4 .
 $\therefore (-3) + (-4) = -3 - 4 = -7$
- Let us take a pair of integers -12 and -2 .
 $\therefore (-12) - (-2) = -12 + 2 = -10$
- Let us take a pair of integers -3 and 3 .
 $\therefore (-3) + (3) = -3 + 3 = 0$

2. Solution:

- Let us have -2 and -10 .
 \therefore Difference $= (-2) - (-10) = -2 + 10 = 8$
- Let us have -7 and 2 .
 $\therefore (-7) + (2) = -7 + 2 = -5$
- Let us have -2 and 1 .
 $\therefore (-2) - (1) = -2 - 1 = -3$

3.

Solution:

Total score of team

$$A = (-40) + (10) + (0) = -40 + 10 + 0 = -30$$

Total score of team

$$B = 10 + 0 + (-40) = 10 + 0 - 40 = -30$$

∴ The scores of both the teams are same i.e. -30.

Yes, we can add the integers in any order.

4.

(i) $-5 + (-8) = (-8) + (-5)$ [Commutative law of additions]

(ii) $-53 + 0 = -53$ [Additive Identity]

[Adding 0 to any integer, it gives the same value]

(iii) $17 + (-17) = 0$ [Additive inverse]

(iv) $[13 + (-12)] + (-7) = 13 + [(-12) + (-7)]$ [Associative law of addition]

(v) $(-4) + [15 + (-3)] = [-4 + 15] + (-3)$ [Associative law of addition]

Solutions
English

	proper	common
1.	Sheela	dog, walk
2.	–	crowd, match
3.	–	apples, basket
4.	Ganga, Hindus	river
5.	Karan	cake
6.	–	pearls, lustre
7.	America, Coach	owner
8.	December	party
9.	Riya, Paris	shoes
10.	Zoya	president, school, club

Civics

1. The Indian Constitution recognises every person as equal. This means that every individual in the country, including male and female persons from all castes, religions, tribes, educational and economic backgrounds are recognised as equal.

It is important as it reflects the true nature of democracy. Everyone is equal in the eyes of law. No one is given preference. It ensures people get equal opportunity to defend themselves in public courts irrespective of their socio-economic positions.

2. Dignity is the right of a person to be valued and respected for their own sake and to be treated ethically.

3. Constitution is a document that lays down the basic rules and regulations for people and the government in the country to follow.

Hindi

1. (क) भाषा के दो मुख्य रूप हैं—मौखिक भाषा और लिखित भाषा।
मौखिक भाषा – टेलीफोन पर बात करना, रेडियो सुनना, भाषण देना।
लिखित भाषा – समाचार-पत्र, पत्र लिखना, ई-मेल करना।
- (ख) भाषा का क्षेत्र विस्तृत एवं व्यापक होता है जबकि बोली एक सीमित क्षेत्र तक बोली जाती है। इसी प्रकार भाषा का अपना लिखित साहित्य तथा व्याकरण होता है जबकि बोली का अपना लिखित साहित्य नहीं होता।

2

भाषा	प्रांत	भाषा	प्रांत
मराठी	महाराष्ट्र	उड़िया	उड़ीसा
तमिल	तमिलनाडु	हिंदी	उत्तर प्रदेश, मध्य प्रदेश, राजस्थान
तेलुगू	आंध्र प्रदेश	बांग्ला	बंगाल
कोंकणी	गोवा	पंजाबी	पंजाब
असमिया	असम	मलयालम	केरल

3

विदेशी भाषाएँ	भारतीय भाषाएँ
रूसी	कोंकणी
फ्रेंच	उड़िया
जर्मन	कश्मीरी
जापानी	मलयालम
स्पेनिश	मराठी