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Observation Record - I

School Name : Government Higher secondary School, Krishnaraya puram.

Name of the guide teacher : R. Tamil Ponni, M.Sc.,
M. Phil. B. Ed.,
P. G. Assistant.

Name of the training teacher : E. Sreembayee

Standard : $\bar{X}$

Subject : Science

Unit : 18 - Genetics

Topic : Monohybrid cross-

Date : 08.09.2023

Duration : 40 minutes

Total number of students : 38

Total number of students present : 38

Number of students absent : NIL

I. Teaching slide:

Chart:

- * The teacher displayed the flow chart of monohybrid cross in the chart.

Flash cards:

- * The teacher showed the flash cards for monohybrid cross.

II. Teaching:

1) Motivation:

- * The teacher started the class by giving motivation and explaining the topics meanings with real life examples to make the students more involved in the class.

2) Introducing the topic:

- * The guide teacher wrote the topic on the black board and given brief explanation

about the topic of monohybrid cross.
Inheritance of one gene

3) Development of the topic:

- * The guide teacher explains about the topic providing various additional information related to the topic.

Monohybrid cross:

- * Crosses involving inheritance of only one pair of contrasting characters are called monohybrid crosses.

eg: Cross between two forms of a single trait like a cross between tall and dwarf plant.

Mendel's Explanation of Monohybrid Cross Parental generation:

- * pure breeding tall plant and a pure breeding dwarf plant.

F₁ generation:

- * Plants raised from the seeds of pure breeding parental cross in F₁ generation were tall and monohybrids.

F₂ generation:

* Selfing of the F₁ monohybrid resulted in tall and dwarf plants respectively in the ratio of 3:1. The actual number of tall and dwarf plants obtained by Mendel was 787 tall and 277 dwarf. External expression of a particular trait is known as phenotype. So the phenotypic ratio is 3:1.

* In the F₂ generation of dihybrid types were obtained.

Tall Homozygous - TT (Pure) - 1

Tall heterozygous - Tt - 2

Dwarf Homozygous - tt - 1

So the genotypic ratio is 1:2:1. A phenotype is the genetic expression of an organism.

Review:

* The guide teacher explained the topic of monohybrid cross and gave examples in an easy way.

5) Homework:

* After completing the teaching, the guide teacher gave assignments to the students related with the topic of monohybrid cross.

III. General aspects:

1) Black board usage:

* The teacher wrote the lesson topic, monohybrid cross clearly and neatly on the blackboard. The teacher wrote from the left to right side on black board to grasp students attention.

2) Voice modulation:

* The voice of the teacher was bold and clear and audible till the last bench.

3) Questioning:

* The guide teacher pointed out simple questions to the students from the topic to investigative their attention and analyze their learning.

Classroom Management :

* The teacher maintained silence in the class during the teaching session.

5) Time management :

* The teacher taught the mendel's explanation of monohybrid cross clearly with examples within the allotted 40 minutes.

6) Significance of Training teacher's observation:

* As a training teacher, I learned how to motivate the students, ask questions, usage of blackboard and classroom management as well as time management by observing the class.

Signature of the
Training teacher.

Observation Record - II

School Name : Government Higher Secondary school, Krishnarajapuram.

Name of the guide teacher : R. Tamil Parani, M.Sc.,
M.Phil., B.Ed.

Name of the training teacher : F. Sivaramayya

Standard : I

Subject : Science

Unit : 18 - Genetics

Topic : Dihybrid cross

Date : 12.09.2023

Duration : 40 minutes

Total number of students : 38

Number of students present : 31

Number of students absent : 01

I. Teaching aids:

Chart:

- * The teacher displayed the examples of dihybrid cross in the chart.

Flash cards:

- * The teacher showed the flash cards for dihybrid cross.

II. Teaching:

1. Motivation:

- * The guide teacher started the class by introducing the basic information that are connecting to the real life situation with related to the topic and created curiosity among the students to ensure full attention in the topic.

2. Introducing the topic:

- * The guide teacher wrote the topic on the black board and given brief explanation

about the topic. Dihybrid cross involves the inheritance of two pairs of contrasting characteristics (or contrasting traits) at the same time. The two pairs of contrasting characteristics chosen by Mendel were shape and colour of seeds: round - yellow seeds and wrinkled - green seeds.

3. Development of the topic:

- * The guide teacher explains about the topic providing various additional information related to the topic.

* Mendel crossed pea plants having round - yellow seeds with pea plants having wrinkled - green seeds.

* Thus it was concluded that round shape and yellow colour of the seeds were dominant traits over the wrinkled shape and green colour of the seeds.

pure breeding
round, yellow
seeds

pure breeding
wrinkled, green
seeds.

$RRYY$

$rryy$

Parents

(Ry)

(ry)

Round, yellow
seeds

$\bigcirc$

F_1 Dihybrid
(First generation)

$RrYy \times RrYy$

Self-pollination

(Ry)	(ry)	(RY)	(rY)
$RRYY$ Round yellow	$RrYy$ Round yellow	$RRYy$ Round yellow	$RrYy$ Round yellow
$RrYY$ Round yellow	$rrYY$ Wrinkled yellow	$RrYy$ Round yellow	$rrYy$ Wrinkled yellow
$RrYy$ Round yellow	$RrYy$ Round yellow	$RRYy$ Round green	$RrYy$ Round green
$rrYy$ Wrinkled yellow	$rrYy$ Wrinkled yellow	$RrYy$ Round green	$rrYy$ Wrinkled green

phenotypic ratio of F_2 generation - 9:3:3:1

Round, yellow - 9

Wrinkled, yellow - 3

Round, Green - 3

Wrinkled, Green - 1

Review:

* After completing the content, the
guide teacher repeated the same

contents to recall the important and specific points in the topic and it is also created interest among the students. The teacher explained the students about the dihybrid cross - Inheritance two genes and law of independent assortment.

5) Home work:

* The teacher gave home work (or) assignments to write and learn the dihybrid cross by given suitable examples.

III. General aspects:-

1) Black board usage:

* The guide teacher wrote clearly on the black board and wrote from the left to right side on blackboard to grasp students attention.

1) Voice modulation:

* The teacher's voice was loud, clear and audible till the last bench of the students.

2) Questioning:

* The teacher pointed simple questions to the students from the topic to involve students attention completely into the topic.

4) Classroom management:

* The teacher could maintain silence in the classroom in such a way to group attention of students fully on lesson.

5) Time management:

* The teacher used the metaphor 40 minutes with proper time management.

and motivating the class with proper explanation and examples to complete the teaching.

6) Significance of training teacher's observations:

* As a training teacher, by observing the class, I learned how to motivate the students, how to introduce a topic, how to use black board, ask questions, classroom and time management.

Signature of the
Training teacher

Observation Record - III

School Name : Government Higher Secondary School, Krishnaraya Puram.

Name of the guide teacher : R. Tamil Ponni,
M.Sc., M.Phil., B.Ed.

Name of the training teacher : E. Srinubayya

Standard : X

Subject : Science

Unit : 18- Genetics

Topic : Mendel's laws

Date : 13.09.2023

Duration : 40 minutes

Total number of students : 38

Number of students present : 38

Number of students absent : Nil

I. Teaching aids :

Chart :

- * The teacher showed the picture of Watson and Crick model of DNA in the chart.

Model :

- * The teacher showed the model (non-working model) of DNA.

II. Teaching :

1) Motivation :

- * The teacher started the class by giving motivation and explaining the topics meaning with real life examples to make the students more involved in the class.

2) Introducing the topic :

- * The teacher wrote the topic on the blackboard and gave brief explanation about the topic Watson and Crick model of DNA. DNA molecule consists of two polynucleotide chains.

3) Development of the topic :

- * The guide teacher explains about the topic and provided various additional information related to the topic.

* These chains form a double helix structure with two strands which run anti-parallel to one another.

* Nitrogenous bases in the centre are linked to sugar-phosphate units which form the backbone of the DNA.

* Adenine (A) links Thymine (T) with 2 hydrogen bonds (A=T)

* Cytosine (C) links Guanine (G) with

3 hydrogen bonds (C≡G).

* This is called complementary base

pairing.

* Hydrogen bonds between the nitrogenous bases make the DNA molecule stable.

A) Classroom management :

* Teacher maintained classroom management by making student to be quiet in the classroom.

B) Time management :

* The teacher used the allotted 40 minutes with proper time management and motivating the class with proper explanation and examples to complete the teaching.

C) Significance of training teacher observation :

* As a training teacher, by observing the class, I learned how to motivate and handle the students, how to introduce a topic, how to use black board, ask questions, classroom and time management.

Signature of the
training teacher.

Observation Record - IV

School Name : Government Higher Secondary School, Krishanarayapuram.

Name of the guide teacher : R. Tamil Ponni,
M.Sc, M.Phil, B.Ed.

Name of the training teacher : E. Srinubayar
Standard : IX

Subject : Science

Unit : 18 - Genetics

Topic : Watson and Crick model of DNA.

Date : 14.09.2023

Duration : 40 minutes

Total number of students : 38

Number of students present : 36

Number of students absent : 02

I. Teaching aids:

Chart:

- * The teacher showed the picture of Watson and Crick model of DNA in the chart.

Model:

- * The teacher showed the model (non-working model) of DNA.

II. Teaching:

1) Motivation:

- * The teacher started the class by giving motivation and explaining the topics meaning with real life examples to make the students more involved in the class.

2) Introducing the topic:

- * The teacher wrote the topic on the blackboard and gave brief explanation about the topic Watson and Crick model of DNA. DNA molecule consists of two polynucleotide chains.

3) Development of the topic:

- * The guide teacher explains about the topic and provided various additional information related to the topic.

* These chains form a double helix structure with two strands which run anti-parallel to one another.

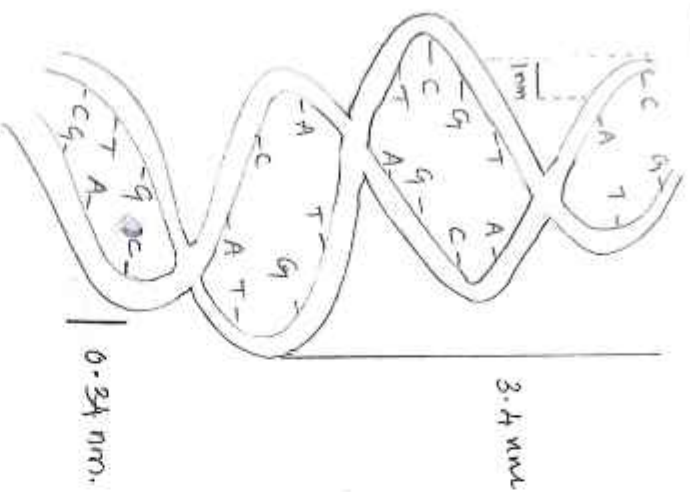
* Nitrogenous bases in the centre are linked to sugar-phosphate units which form the backbone of the DNA.

* Adenine (A) links Thymine (T) with 2 hydrogen bonds ($A = T$)

* Cytosine (C) links Guanine (G) with 3 hydrogen bonds ($C \equiv G$).

* This is called complementary base pairing.

* Hydrogen bonds between the nitrogenous bases make the DNA molecule stable.



Structure of DNA.

- * Each turn of the double helix is 34 Å (3.4 nm). There are ten base pairs in a complete turn.
- * The nucleotides in a helix are joined together by phosphodiester bonds.

A) Review :

- * After completing the content, the teacher repeated the same content to recall the important and specific points about the topic and it also created interest among the students.

B) Homework :

- * The teacher gave homework to write and learn the structure of the DNA.

III. General aspect :

1) Blackboard usage :

- * The teacher wrote and drew the lesson topic and diagram clearly and neatly on the blackboard.

2) Voice modulation :

- * The teacher's voice was bold, clear and audible till the last bench students.

3) Questioning:

* The teacher pointed simple questions to the students from the topic to involve students' attention completely onto the topic.

4) Classroom management:

* Teacher maintained classroom management by making student to be quiet in the classroom.

5) Time management:

* The teacher used to allotted 40 minutes with proper time management and motivating the class with proper explanation and examples to complete the teaching.

6) Significance of training teachers observation:

* As a training teacher, by observing the class, I learned how to motivate the students, how to introduce a topic, how to use black board, ask questions, classroom and time management.

Signature of the
Training teacher.

Observation Record - V

31

School Name : Government Higher Secondary School, Krishnarayapuram.

Name of the Guide teacher : R. Tamil ponni, M.Sc.
M. Phil, B.Ed

Name of the training teacher : E. Sivarubayee
Standard : X

Subject : Science

Unit : 18 - Genetics

Topic : DNA Replication

Date : 15.09.2023

Duration : 40 minutes

Total number of students : 38

Number of students present : 35

Number of students absent : 03

I. Teaching aids:

Chart:

- * The teacher showed the picture of DNA replication in the chart.

Flash cards:

- * The teacher showed the flash cards for DNA replication process.

II. Teaching:

1. Motivation:

- * The teacher started the class by motivating the students by explaining the real life DNA Replication.

2. Introducing the topic:

- * DNA replication is one of the basic process that occurs within a cell. DNA molecule produces exact copies of its own structure during replication process.

3. Development of the topic:

Origin of replication:

- * The specific points on the DNA, where the replication begins, is the site of origin of replication. The two strands open and separate at this point forming the replication fork.

Unwinding of DNA molecule:

- * The enzyme called helicase, bind to the origin of replication site. Helicase separates the two strands of the DNA. The enzyme called topoisomerase separates the double helix above the replication fork and removes the twists formed during the unwinding process. Each of the separated DNA strands function as a template.

Formation of RNA primer:

- * An RNA primer is a short segment of RNA nucleotides. The primer is synthesized

by the DNA template close to the origin of replication site.

A) Review:

* The teacher explained the topic with DNA replication and process of the DNA replication in an easy way.

B) Home work:

* The teacher assigned the students to learn and write the DNA replication

III. General aspects:

1) Black board usage:

* The teacher used the black board for writing the lesson topic of DNA replication. He/she started to write from the left to right also specified the important points with underline on black board.

2) Voice modulation:

* The voice of the teacher was bold and clear. Students felt the last bench.

3) Questioning:

* The teacher asked two questions to the students to grasp their attention completely into the topic.

A) Classroom management:

* The teacher made the student to maintain silence during the class.

5) Time management:

* The teacher taught the DNA replication clearly with examples within allotted 40 minutes.

6) Significance of Training teacher observation:

* As a training teacher, by observing the class, I learned how to motivate the students, how to introduce a topic, how to use blackboard, ask questions, classroom and time management.

Signature of me
training teacher.