

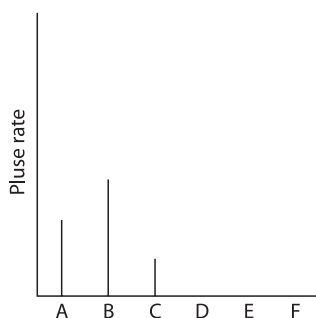
PROJECT FOR CLASS X LIFE PROCESSES

- The class is divided into groups of 5-6 students each.
- Every student in the group is asked by the tr. To perform the following task and record in the tabular form as given below:

S.No.	Name of Students	Before going for Assembly A	After coming from assembly B	While sitting in the class C	After recess D	After games period E	After getting up in the morning F
1.							
2.							
3.							
4.							
5.							
6.							

Avg Pulse Rate All 6 ready 6. All 6 Observation 6 Same for every situation

- After calculating the average pulse rate for the above 6 situations the group will plot a graph.



- Presentation to be given by each group on a chart

Project (Contd.)

- The following questions can be asked:

- Under what conditions the pulse rate increases / decreases?
- What causes increase / decrease of pulse rate?
- Why does the pulse rate increase / decrease?

- The teacher should ask the students to listen to all the presentations and can ask some * questions for bonus marks:

- In which group the average pulse rate was minimum for A / B / C / D / E / F. What was it?
- In which group the avg pulse rate was maximum for A / B / C / D / E / F What was it?

The teacher can have her/his own questions

ENERGY CONSERVATION

1. The class is divided into groups of 5-6 students each.
2. Every students in the group is asked to make the following observations
 - a. Name of the students
 - b. Address:
 - c. No. of family members:
 - d. No. above 18 yrs of age:
 - e. No. below 18 yrs of age:
 - f. No. of rooms in the house:
 - g. No. of Bulbs in the house / Total watts
 - h. No. of tube lights in the house / Total watts
 - i. Names of other electrical gadgets with wattage:
 - j. Electricity Bill for the month in rupees:
3. Measures which can be taken to reduce the electricity bill of the house
4.
 - a. relation between the number of family members and consumption of electricity.
 - b. Relation b/w the average age and units of electricity consumed.
 - c. Relation b/w the no. of rooms and units of electricity consmed.

[Note: 4a to 4c is based on gp. data]

The below mentioned activity can be taken up section wise [to have a healthy competition]

1. The science teachers needs to find out the electricity bill of the school along with the no. of units consumed
2. The students of the class (in this case class X) will be told about the same.
3. Each section will be assigned a moth of the year. The students will do the following in the moth assigned:
 - (i) The class will be assigned a specific area of the building.
 - (ii) The students will check and switch off the extra lights/fans after every period in the designated area.
 - (iii) Students of this class will visit other sections of other classes and give talk about energy conservation.
 - (iv) Students of this class will also put up at least one poster & one slogan on energy conservation on each floor.
 - (v) On one designated day of the week one student will address the assembly and give his feedback about the classes not taking care / caring by switching off extra lights and fans.
 - (vi) Marks to be awarded in the following manner:
 - i. Assembly talks
 - ii. Talks in classes / sections covered
 - iii. Display of poster / slogan
 - iv. Electricity Bill for the month

If no reduction is bill = 0/4

10% reduction is bill = 2/4

15% reduction is bill = 3/4

20% reduction is bill = 4/4

Or Any other way depending upon the comparative performance.

The record for VI a to Vic can be maintained by the Science club members of senior class.

CCE FOR LEARNERS

1. Learner is able to know about his / her strengths & weaknesses.
2. Self assessment by the learner throughout the academic session motivate him to develop good study habits & correct errors.
3. Develops better observation skill and learn to question why and how of different phenomenon observed / experts done? So the learner develops enquiry approach.
4. Learner may develop thinking out of the box.
5. Helps in identifying aptitude and interest of the learner which can help in taking decision for future.
6. C.C.E. will reduce tension for the learners as it is not examination oriented and thus help in the overall development of the learner.
7. Learner will develop better IPR with peer gp. as CCE does not encourage unhealthy competition about obtaining marks in examinations.
8. Application of CCE for science teaching will result in:
 - i) Better understanding of concepts
 - ii) Application of knowledge which is very important in science subjects
 - iii) Knowledge application results in:
 - a. Healthy living
 - b. Better management of situations in case of crisis.
 - c. Less dependence on other people for small household problems which will reduce expenditure.

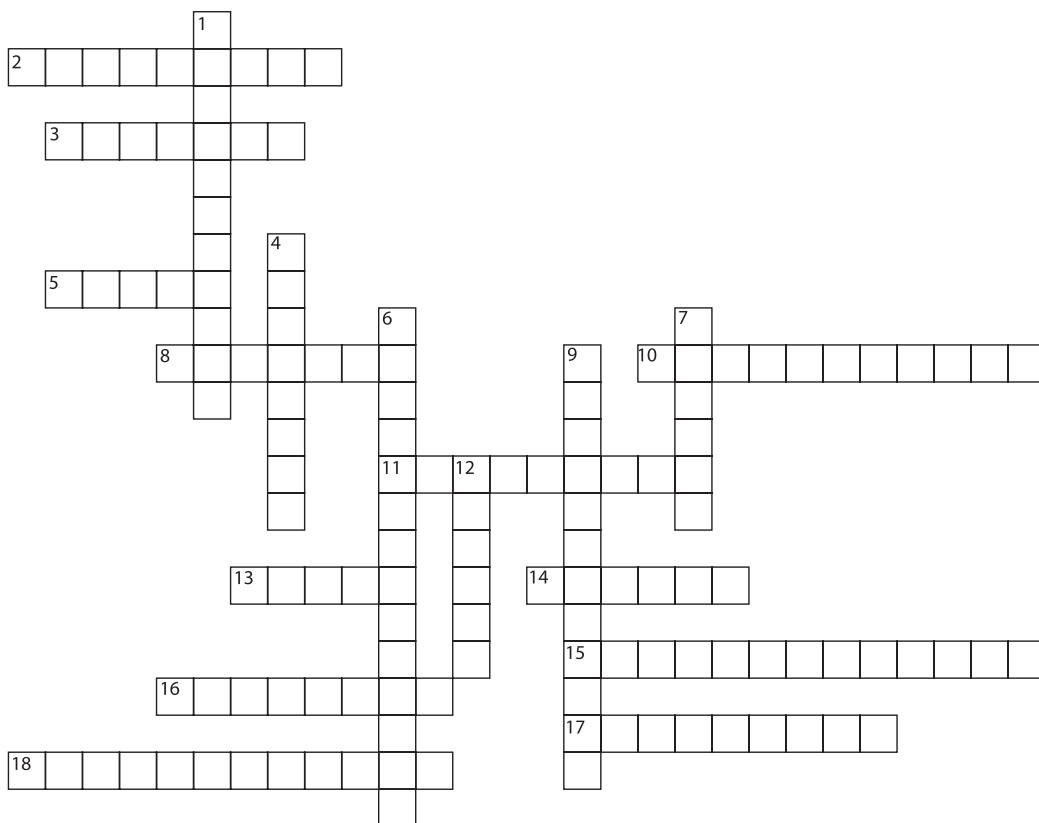
FEMALE REPRODUCTION CROSSWORD

Across

2. The menstrual cycle stops and a woman is no longer capable of getting pregnant.
3. They produce the female sex hormones and store and release the ovum.
5. A thin ring of tissue covering the opening to the vagina.
8. Below the clitoris, the opening to the bladder.
10. Two folds of skin that protect the genitals.
11. When a mature egg leaves the ovary and goes to the uterus.
13. The external female sex organs.
14. The neck of opening of the uterus.
15. The oviduct is cut and tied.
16. They are in the body where the sex organs are located.
17. A mound of fatty tissue which covers the public bone.
18. Painful menstruation.

Down

1. Two smaller folds of tissue that form a hood over the clitoris.
4. The center of sexual sensation.
6. These oviducts carry fortified towards the uterus.
7. Female organ of intercourse, an empty passageway leading from the vaginal opening to the uterus.
9. Surgical removal of the uterus.
12. A hollow, muscular organ that protects and nourishes the fetus.



HOW DO ORGANISMS REPRODUCE

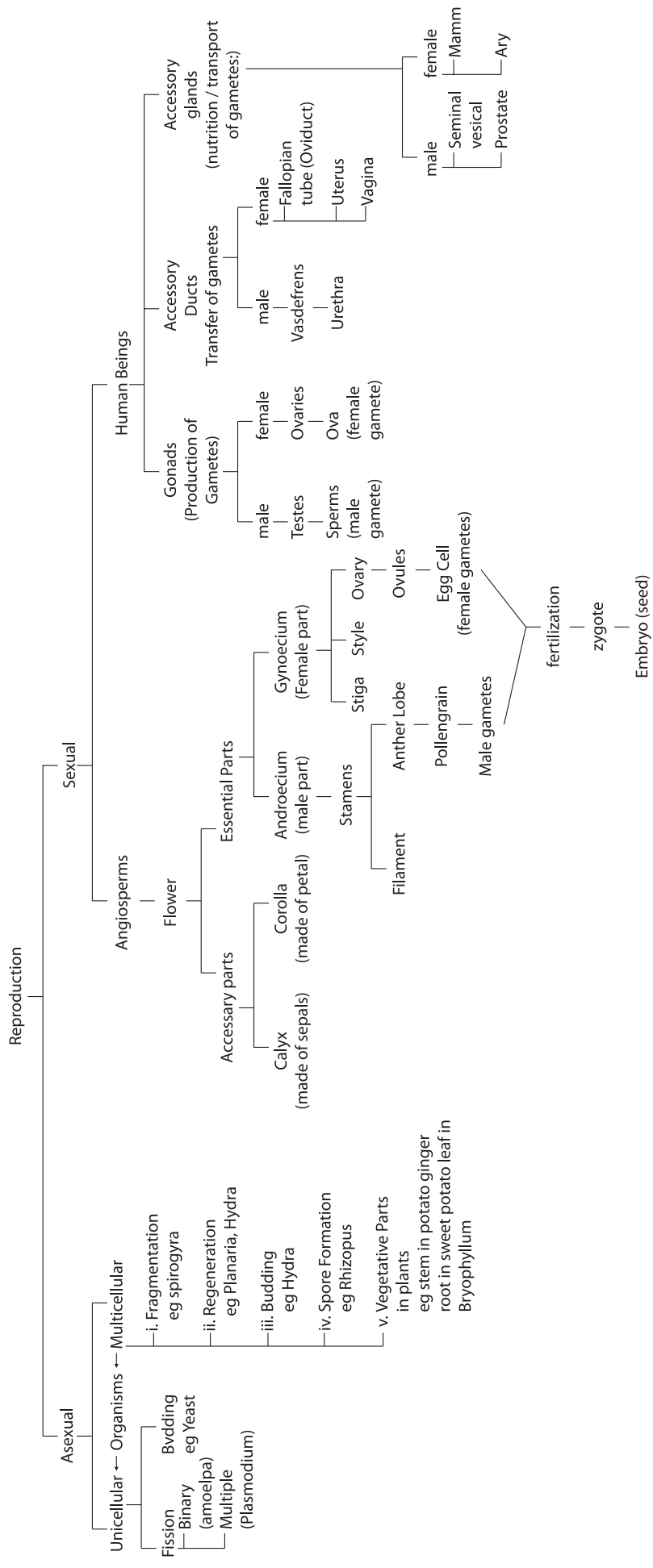
Brief of the lesson

Reproduction ie producing offsprings of its own kind is an inherent property of all living beings. Organisms create exact copies of themselves with little or no variations from the parents due to sexual or asexual reproduction respectively. Lower organisms which are simple in organisation / structure reproduce mainly by asexual means while higher / complex organisms reproduce sexually.

Sexual reproduction involves the formation of gametes by meiotic division. As well as random fertilisation which is the cause of variation. Variations are necessary for the survival of the species in the constantly changing environment.

Flower is the reproductive organ in Angiosperms and the outcome of sexual reproduction is the seed on the embryo (baby plant)

In human beings puberty marks the maturity of sexual organs. Sexual reproduction involves internal fertilization in fallopian tube and growth of foetus in the uterus. Viviparity and maternal care ensures better survival of the new born. Various types of contraceptive measures and healthy living practices ensure reproductive health of the population of the country



Learning objectives

- Students will learn to learn work to in groups, compile data & deduce inference and develop enquiry approach
- Students will be able to compare and contrast.
- Students will be able to conclude that fruit is a part of flowering plant that contains seeds.
- Students will know the importance of reproduction and vast variations existing amongst organisms through practical approach.
- Students will develop the skill of observing through the microscope.
- Students will be Able to compile data & represent it in th form of histograms / Charts / graphs

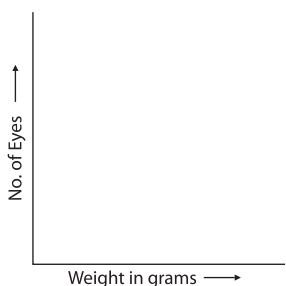

Teaching Learning materials

Apparatus: Simple microscope, Compound microscope, slides, cover slips, Beaker Magnifying glass etc; plastic knives.

Chemicals : Glycerine, Sofranine

Materials: Permanent slide of amoeba/ paramaecium showing binary fission, specimen / slide of planaria, slide of rhizopus slide of hydrabread polybags, plain paper

Living : potato tuber, flowers of different kinds, seeds of rajmah or any other available, mushroom, (dicot) fruits (guava) lady finger, cucumber lemon, orange, tomato etc).

<p>iv) Asexual Repds through vegetative parts in plants through root, stem & leaves.</p>	<p>i) The teacher will explain budding in potato tuber. ii) Every child to take one tuber & weigh it. iii) Count the no. of buds in each tuber. iv) Study the effect of temp. v) Teacher all explain how data on weight & no. of eyes of the whole is to be compiled & draw inference by making histogram/graph (with & no. of eyes) in the manner explained below by the teacher.</p> 	<p>i) Students will do a gp. activity take 4 pcices of the potato two with at least two eyes each and two without eyes. ii) 1st exptt setup A w/o eyes, A' with eyes On wet cotton at room temperature iii) 2nd Exptt Setup</p> <div style="text-align: center;">  </div> <p>on wet cotton in the refrigerator students will iv) Record observations for 8-10 days according to format given by the teacher.</p> <table border="1" data-bbox="820 766 1161 1050"> <thead> <tr> <th rowspan="2">S.No.</th> <th rowspan="2">Date</th> <th colspan="2">No. of seeds germinating</th> </tr> <tr> <th>At Room temp</th> <th>At low temp</th> </tr> </thead> <tbody> <tr><td>1.</td><td></td><td></td><td></td></tr> <tr><td>2.</td><td></td><td></td><td></td></tr> <tr><td>3.</td><td></td><td></td><td></td></tr> <tr><td>4.</td><td></td><td></td><td></td></tr> <tr><td>5.</td><td></td><td></td><td></td></tr> <tr><td>6.</td><td></td><td></td><td></td></tr> <tr><td>7.</td><td></td><td></td><td></td></tr> <tr><td>8.</td><td></td><td></td><td></td></tr> </tbody> </table>	S.No.	Date	No. of seeds germinating		At Room temp	At low temp	1.				2.				3.				4.				5.				6.				7.				8.				<table border="1" data-bbox="1177 94 1518 420"> <thead> <tr> <th colspan="4">Germination of Tubers At</th> </tr> <tr> <th>Date</th> <th>Room Temp.</th> <th colspan="2">In Refrigerator</th> </tr> <tr> <th></th> <th>Exptt. Setup I</th> <th colspan="2">Exptt. Setup II</th> </tr> <tr> <th></th> <th>with eyes</th> <th>w/o eyes</th> <th>with eyes</th> </tr> <tr> <th></th> <th></th> <th></th> <th></th> </tr> </thead> <tbody> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> </tbody> </table> <p>Words to be filled:- No growth sen, slight growth in one / two / three buds, Increased size of buds (1/2/3) any other as desired observed by the teacher.</p> <p>marks to be awarded out of 5 Teacher will evaluate on the given 5 points Why do we see growth in some pieces What is the effect of temperature on growth What is so special about eyes? Observation table If there is any relation b/w the size / weight of potato and number of eyes. Draw bar graph / histogram (wt. Vs no. of eyes)</p>	Germination of Tubers At				Date	Room Temp.	In Refrigerator			Exptt. Setup I	Exptt. Setup II			with eyes	w/o eyes	with eyes																								
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<p>Sexual Reproduction (plants) through flowers</p>	<p>i) Teacher will explain the parts of a flower on b.b. with the help of specimens/ diagrams/ charts etc. ii) Students will be asked to bring any 1 glower to the class. The next day. Teacher will demonstrate by cutting section of ovary.</p>	<p>i) The students will break the flower after exchanging it with their seating partner ii) The students will identify the parts & count the number iii) Draw the diagram as observed, of all the whorls. iv) They, will Dust polien on the slide & observe under microscope v) Students will cut t.s. o ovary and observe for ovules.</p>	<p>Is the flower complete / incomplete Colour of whorls How many whorls are there? What is the number of stamens? What is the number of carpels? Why the stamen number is generally more. Draw diagram of pollen as seen under the microscope Observe & draw diagram of as seen</p>																																																																														
<p>Sexual Repdn Seed formation in fruits</p>	<p>i) The teacher will explain seed formation & parts of seeds (Dicot & Monocot) ii) Make groups in the class and ask each group to bring 20 Rajmah seeds. iii) He/She will explain the procedure for seed germination & recordent observations</p>	<p>Every gp. will observe the seeds & record the colour, size (ongraph paper) and weight of twenty seeds. Gp. leader will give the presentation. Students will Soak the seeds overnight</p>	<p>Students to be evaluated on the observations made Why are all the seeds in the class not similar in size, weight & colour? Depending upon the number of parameters observe & presentation given marks to be awarded to each group (Out of 3)</p>																																																																														

	<p>iv) Students will be asked to observation daily & calculate% germintr. formula for % germination $\frac{\text{no. of seeds germinated} \times 100}{\text{Total No, of Seeds}}$</p> <p>Teacher will tell the students to measure the length of radical every day & give the formula for observature table.</p>	<p>Take cotton / Sponge (Soaked & Squeeze out water) & place 10 seeds in two petri dishes Place one at room temp. And the other in refrigerator Record observations for 7-10 days.</p> <p>Observation Table for recording the length of radicle</p> <table border="1" data-bbox="836 399 1153 619"> <thead> <tr> <th>S.No.</th> <th>Date</th> <th>Length of Radicle (cm)</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td></tr> </tbody> </table> <p>Students will measure the length of radicle with the help of thread & Prepare</p>	S.No.	Date	Length of Radicle (cm)																															<p>How many seeds germinated at room temp. And in refrigerator? Which part of seeds comes out fist? Draw diag. Of embryo on day brought as some students may bring carrot /radish Observation table. (format given) What is the average percentage germination at room temperature & in refrigerator? If there is any relation b/w the % germination and weight of seeds.</p>
S.No.	Date	Length of Radicle (cm)																																		
<p>Sexual Reproduction in human beings with parts of reproductive system & their function</p>	<p>i) The teacher will explain parts of reproductive system with the help of charts/ diagrams ii) The teacher will give a crossword puzzle.</p>		<p>Evaluation to be done on the basis of above points by the teacher out of 5 marks/-</p>																																	

	<p>he following questions Across</p> <p>i. Cell division that produces gametes (7)</p> <p>iii. Stage of development after embryo (5)</p> <p>v. Tubes transferring eggs to the uterus (9)</p> <p>vii. Make gamete / Sex cell (5)</p> <p>viii. This gland releases hormones involved with reproduction (9)</p> <p>x. Union of sperm & egg (13)</p> <p>xi. A fertilised egg (6)</p> <p>xiii. The cord connects the baby to mother (9)</p> <p>xvii. Th vas carries sperm (8)</p> <p>xxii. the shedding of uterine lining. (12)</p> <p>xxiv. Abbrev. For follicle stimulating hormone (3)</p> <p>xxv. Construction b/w vagina & uterus (6)</p> <p>xxvii. Femal Sex hormone (12)</p> <p>xxx. Male organ producing sperm (6)</p> <p>xxxi. Process of release of egg from ovary (9)</p> <p>xxxii. Where sperm are stored & mature (10)</p>	<p>Answer</p> <p>i. Meiosis</p> <p>iii. Fetus</p> <p>v. Fallopian</p> <p>vii. Sperm</p> <p>viii. Pituitary</p> <p>x. Fertilization</p> <p>xi. Zygote</p> <p>xiii. Umbilical</p> <p>xvii. Deferens</p> <p>xxii. Menstruation</p> <p>xxiv. FSH</p> <p>xxv. Cervix</p> <p>xxvii. Progesterone</p> <p>xxx. Testis</p> <p>xxxi. Ovulation</p> <p>xxxii. Epididymis</p>	
	<p>Down</p> <p>2. Another name for egg cell (6)</p> <p>3. Sugar released in male to give energy to swim (8)</p> <p>4. male sex hormone (12)</p> <p>6. Female organ producing egg cells (5)</p> <p>9. Seminal Produce seminal fluids (7)</p> <p>12. This begins when embryo implants (9)</p> <p>14. Hormone triggers ovulation (11)</p> <p>15. Gland producing seminal fluids (8)</p> <p>16. Hormone causes thickening of uterine lining (8)</p>	<p>Answer</p> <p>2. oocyte</p> <p>3. Fructose</p> <p>4. Testosterone</p> <p>6. Ovary</p> <p>9. Vesicle</p> <p>12. Pregnancy</p> <p>14. Luteinizing</p> <p>15. Prostate</p> <p>16. Estrogen</p>	

	<p>18. Tubules are site of sperm production (12)</p> <p>19. Whip like tail in sperm (9)</p> <p>20. Egg cell develop inside this structure (8)</p> <p>21. Finger like projections at the entrance to oviduct (8)</p> <p>23. Carries both sperms & urine in males (7)</p> <p>26. This structure implants in the uterus (6)</p> <p>28. General terms for reproductive organs (6)</p> <p>29. Location of chromosome in a sperm cell (4)</p>	<p>18. Seminiferous.</p> <p>19. Flagellum</p> <p>20. Follicle</p> <p>21. Fimbriae</p> <p>23. Urethra</p> <p>26. Embryo</p> <p>28. Gonads</p> <p>29. Head</p>	<p>Note:</p> <p>* Extra terms can be filled in by the teacher and the crossword presented to students & marked/evaluated for correct Answers</p> <p>* On any 10 correct answer full marks (5) should be given by the teacher.</p>
<p>Reproductive Health Contraceptive Measures</p>	<p>Teacher will explain the importance of reproductive health for the population & need for contraceptive measures</p> <p>He/She will also explain different contraceptive measures</p> <p>Teacher will divide the class in 4 groups and hold a quiz</p> <p>The following rules of the quiz will be given by the teacher</p> <p>There are 3 rounds in a quiz</p> <p>Ten seconds are given to answer every question</p> <p>In the first round answer Yes or no. Question is not passed to the next team</p> <p>Each question carries 10 marks in 1st round</p> <p>Answers are to be given in one word in the 2nd round</p> <p>Each question carries 10 marks</p> <p>The question if passed to the next team will carry 6 marks if forwarded to the other team carries 4 marks on further passage carries 2 marks.</p> <p>The 3rd round is a Rapid fire round in which a set of 4 questions will be asked and answers to be given as true/False in 20 seconds (total time for Q & Answers)</p>		

	<p>Every question carries 2-5 marks in 3rd round One student each will be selected as time keeper, & score keeper. Teacher will be the quiz master Teacher will instruct the students to select the spokesperson for answering for the team</p>	<p>Students will answer the questions asked (Quiz enclosed)</p>	<p>Team mates will be awarded marks out of 5 as obtained in the quiz.</p>
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QUIZ ON REPRODUCTIVE HEALTH

Round 1 Answer in Yes/No

- i. Hepatitis B can be sexually transmitted Yes
- ii. Surgical methods are safe contraceptive methods in the long run Yes
- iii. Cu T blocks the entry of sperms No
- iv. Women at any age can become pregnant No

Round 2 One Word Answer

- i. Full form of AIDS Acquired Immunodeficiency Syndrome
- ii. Part of the female reproductive tract blocked in surgical contraceptive measures Fallopian tube
- iii. STD caused by bacteria Syphilis / Gonorrhoea
- iv. STD other than AIDS caused by virus Warts / Hepatitis B

Round 3 Rapid fire (True / False) Gp I

- i. Copper T is placed in urethra F
- ii. The birth and death rate determines population size T
- iii. Prenatal sex determination is prohibited by law T
- iv. People with multiple sex partners are at high risk for getting STDs T

Gp II

- i. Surgical methods are used illegally for male foeticide F
- ii. condoms prevent only STD F
- iii. Pills cause contraception in females T
- iv. One of the causes for poverty can be overpopulation T

Gp III

- i. A lot of STDs have no noticeable symptoms T
- ii. Sexually active young people should be immunised against Herpes/..... F
- iii. Women who have had an STD are at increased risk for infertility T
- iv. Gonorrhoea is not curable F

Gp IV

- i. STDs occur most often in 15-25 yr olds T
- ii. One can get several STDs at one time T
- iii. Genital herpes is curable F
- iv. STDs are frequently spread by people using public toilet seats F

ADDITIONAL QUIZ

QUESTIONS ON REPRODUCTIVE SYSTEM 'HUMAS')

One mark (MCQ)

1. Which part of male reproductive system produces sperm cells?
a. Testes b. Penis c. Urethra d. Sperm duct
Ans (a)
2. Sperm cells are adapted for their function by
a. Not having nucleus b. Having sharp edges to cut egg membranes
c. Streamlined shape d. None of the above
Ans (c)
3. How long is an average menstrual cycle from start to finish?
a. 20 days b. 2 weeks c. 28 days d. 7 days
Ans (c)
4. At what point of/in menstrual cycle is fertilisation most likely?
a. During menstruation b. Between 12 & 16 days
c. After 20 days d. Between 25 & 28 days
Ans (b)
5. What does the mother's blood take away the baby & into the placenta?
a. Oxygen b. Water c. Carbon dioxide d. Food
Ans (c)
6. What happens to the uterine wall during menstruation?
a. It grows & becomes thicker ready to receive fertilized egg.
b. It is absorbed back into body
c. It gets thinner
d. It breaks away and leaves the body through vagina
Ans (d)
7. Which of the following is the correct description of human life cycle?
a. Babyhood, Childhood, Adolescence, Adulthood
b. Childhood, babyhood, adulthood, adolescence
c. Adolescence, babyhood, adulthood, childhood
d. None of the above
Ans (a)
8. Why is breast milk important to a new born baby?
a. It is at right temperature
b. It matches the needs of baby
c. It contain antibodies against common microbes
d. It tastes good.

9. Which of the following will affect the way a fetus grows?

- a. Chemicals in cigarette smoke
- b. Alcohol
- c. Drugs
- d. All of the above

Ans (d)

10. When a sperm is deposited into the vagina which route does it travel?

- a. Vagina – Ovary – Uterus – Oviduct
- b. Vagina – Cervix – Uterus – Oviduct
- c. Vagina – Cervix – Uterus – Oviduct
- d. Vagina – Uterus – Cervix – oviduct

Ans (b)

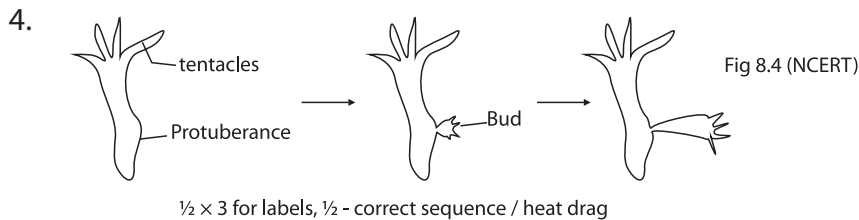
QUESTION BANK

2 marks Questions

1. What is present in the nucleus of the cell? Name the chemical and its function which forms these structures
2. Name the type of reproduction producing variations? Why re variations necessary?
3. Give one example each of the following:
 - a. Organisms in which binary fission occurs is any plane
 - b. Organism causing kala-azar
 - c. Unicellular organism reproducing by multiple fission
4. Draw labelled diagrams showing budding in hydra.
5. Dist 4 advantages of growing plants by vegetative propagation
6. How is the number of chromosomes maintained in a sexually reproducing organism?
7. Draw labelled diagram of dicot embryo.
8. List two pubertal changes each taking place in human male & female
9. Where are testes located? What will happen if they are present in the obkomen?
10. What is placenta? List 2 Functions of placenta.

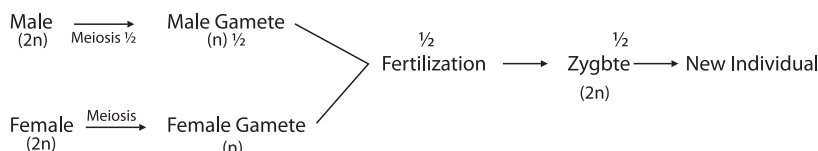
Question Bank (Key)

1. Chromosomes, Deoxyribo nucleic Acid / DNA, Gives information for making protect
2. Sexual Reproduction (1), For survival fo the species in the changing environment (1)
3. 1) Amoeba ($\frac{1}{2}$) 2) Leishmania ($\frac{1}{2}$) 3) Yeast ($\frac{1}{2}$) 4) Plasmodium ($\frac{1}{2}$)



5. i) Quick method
 - ii) Used in plants which do not produce seeds eg banana, jasmine
 - iii) Plants produced are genetically identical to parents
 - iv) Can be used for agricultural purposes
6. i) Sexually reproducing organisms male and female parts produce Gametes.
 - ii) Gametes are produced by Meiosis
 - iii) Gametes have half the number of chromosomes
 - iv) Fertilization Restores chromosome number

Or



7. Fig 8.9 3 tables (1½), heat diag (½)
8. Pubertal changes in female : i) Breast Enlargement (½), ii) Menstruation (½)
male : i) Thick hair growth on face (½), ii) Cracking of voice
9. Scrotal Sacs / Scrotum (1)
Sperm formation will not occur (½)
due to higher temperature in the abdomen (½)
10. Placenta is disc like special tissue (½) / embedded in the uterine wall (½) / It contains villi on the embryo side (½) / Blood spaces on the mother's side of tissue (½) / (Any two)
Two functions :
 - a. Passage of glucose (½) / Oxygen to the embryo (any 1)
 - b. Removal of waste produced by embryo (½) / CO₂ (½)

QUESTION BANK

3 marks Questions:-

1. Draw diagram of male reproductive system and label scrotum, penis, bladder, ureter, vas deferens and testis. ($\frac{1}{2} \times 6$)
2. Draw labelled diagram of l.s. of lower. ($\frac{1}{2} \times 6$)
3. Draw diagram of pollen germinating on the stigma of the flower. Label female gamete, male gamete, pollen tube, stigma, ovary & pollen grain ($\frac{1}{2} \times 6$)
4. Differentiate between self pollination and cross pollination
5. What is the fate of the following after fertilization:
 - a. Ovule
 - b. Ovary
 - c. Petals
 - d. Stamens
 - e. Style
 - f. Sepals($\frac{1}{2} \times 6$)
6. Match the following:: ($\frac{1}{2} \times 6$)

A	B
i. Spirogyra	Spores
ii. Planaria	Leaf buds
iii. Bryophyllum	Stem cuttings
iv. Rhizopus	underground stem
v. Sugarcane	Regeneration
vi. Banana	Fragmentation
7. Justify giving reasons:
 - a. Complex organisms cannot give rise to new individuals through regeneration
 - b. Vegetative propagation is practised for growing only some types of plants.
 - c. Many diseases are sexually transmitted
8. How do the following help in contraception? Explain giving examples. (1×3)
9. What are the different ways by which STDs can occur? (1×3)
10. i. How does uterus prepare itself to receive a fertilised egg?
11. ii. What happens when the egg is not fertilised? (1.5×2)

QUESTION BANK (KEY)

- Fig 8.10 correct labels $\frac{1}{2} \times 6 = 3$
- Fig 8.7 stigma, style, ovary $\frac{1}{2}$, pistil, petal, stamen, sepal anther, filament and any 2 from the underlined $\frac{1}{2}$
- Fig 8.8 six correct label $\frac{1}{2} \times 6$
- | Self pollination | Cross pollination |
|--|--|
| a. Flower is always Bisexual | Flower can be unisexual/bisexual |
| b. Transfer of pollen from anther to stigma of the same flower | Transfer of pollen from anther to stigma of another flower of the same species |
| c. Agents for transfer of pollen are not required | Agents like wind, water, insects etc are required to transfer pollen |
- | | |
|-------------|---------------------|
| i) Ovaule | Seed |
| ii) Ovary | Fruit |
| iii) Petals | wither and fall off |
| iv) Stomens | wither and fall off |
| v) Style | wither and fall off |
| vi) Sepals | wither and fall off |
- | A | B |
|------------------|------------------|
| i) Spirogyra | Fragmentation |
| ii) Planaria | Retgeneration |
| iii) Bryophyllum | Leaf Buds |
| iv) Rhizopus | Spores |
| v) Sugarcane | Stem cuttings |
| vi) Banana | Underground stem |
1. Regeneration involves formation of the whole body from a small part ($\frac{1}{2}$). In complex organisms since the body is highly differentiated regeneration is not possible ($\frac{1}{2}$).
 2. Vegetative propagation is practised for:
 - Agricultural purposes for quick growth
 - Producing genetically identical population of plants having desired characteristics
 - Producing plants which have lost the capacity to produce plants which have lost the capacity to produce flowers & seeds any 2 ($\frac{1}{2} \times 2$)
 3. Many disease are sexually transmitted as sexual act is a very intimate connection of bodies. (1)
- i. Barrier methods: Sperm does not reach egg, Condom
 - ii. Surgical methods : Blocking of sperm / Egg transfer, Blocking of vas deferens / Fallopian tube
 - iii. Hormonal pills: Eggs are not released / fertilised ($\frac{1}{2}$), Oral pills in females change hormonal balance ($\frac{1}{2}$)
- i. By having multiple sex partners
 - ii. By transfusion of infected blood
 - iii. By infected needles / syringes used by drug users
 - iv. From infected mother to foetus (1×3) any other

10. i. Uterus becomes thick and spongy to receive fertilised egg. It nourishes ($\frac{1}{2}$) the embryo
- ii. If the egg is not fertilised, lining is not required ($\frac{1}{2}$), it breaks slowly ($\frac{1}{2}$) & comes out through vagina as blood & mucous ($\frac{1}{2}$)