9 Sexual Reproduction and Endocrine System

LESSON PLAN

SPECIFIC OBJECTIVES

The students will learn about

- reproduction and modes of reproduction
- asexual reproduction
- sexual reproduction
- human reproduction
- development of embryo in birds
- development and life cycles of animals
- determination of sex in human beings
- adolescence
- human endocrine system
- reproductive health

TEACHING AIDS

Pictures/charts/models/animations on binary fission in *Amoeba*; budding in *Hydra;* the process of fertilisation; male and female reproductive systems; development of embryo after it is implanted in the uterus; viviparous and oviparous animals; life cycle of frog and butterfly; sex determination in humans; endocrine system of humans; balanced diet, personal hygiene, physical exercise.

LESSON PLAN

- Teacher will start the chapter by going through the points given in 'Know these points before you start' section.
- Now, teacher will define the term reproduction and discuss the modes of reproduction.
- Teacher will explain asexual reproduction in *Amoeba* and *Hydra*.
- Teacher will define unisexual and bisexual animals, formation of male and female gametes, fertilisation and explain sexual reproduction.

- Teacher will define fertilisation, its types and significance of fertilisation.
- Teacher will ask students to solve Check Point 1.
- Now, teacher will discuss human reproduction by explaining male and female reproductive systems, process of fertilisation, development of embryo and birth of baby.
- Teacher will define viviparous and oviparous animals and development in birds.
- Now, teacher will describe life cycles of frog and butterfly.
- Teacher will ask students to solve Check Point 2.
- Now, teacher will explain the process of sex determination in human beings.
- Teacher will define the term adolescence and changes occurring during puberty in boys and girls.
- Then, teacher will discuss secondary sexual characteristics in boys and girls.
- Teacher will define endocrine system.
- Teacher will explain the term reproductive health, its need in adolescents and ways to maintain it.
- Now, teacher will ask students to solve Check Point 3.
- Teacher will make students revise the new terms given under the head 'Know These Terms'.
- Finally, teacher will help students to solve the questions given in exercises under the head 'Practice Time' and 'Think Zone'.

BOOST UP

- Teacher should demonstrate and explain activities given in the chapter.
- Teacher should discuss the information given under the head 'Something More'.
- Teacher should discuss the conversation of Annu and Mannu given in between the topics.
- Teacher should discuss the facts given in the table.
- Students should be encouraged to study the life cycle of other animals such as lizard, cockroach, hen, etc.

EXPECTED LEARNING OUTCOMES

The students know about

- reproduction and modes of reproduction.
- process of sexual reproduction – formation of male and female gametes, fertilisation, implantation and development of embryo.
- human reproduction including male and female reproductive systems and development of foetus.
- viviparous and oviparous animals, and development in birds.
- life cycle of some animals such as frog and butterfly.
- sex determination in human beings.
- adolescence and pubertal changes in boys and girls.
- endocrine system and reproductive health.

EVALUATIVE QUESTIONS

The teacher may ask the following questions for evaluating the understanding of students:

1. What is meant by reproduction?
2. Mention the differences between asexual and sexual reproduction.
3. Write the differences between external and internal fertilisation.
4. Write two examples each of viviparous and oviparous animals.
5. What is brooding in birds?
6. Describe the life cycle of a frog.
7. How many pairs of chromosomes do human beings have in their cells?
8. What is adolescence?
9. What are endocrine glands?
10. How can adolescents maintain their reproductive health?