

CBSE Class 10 Science Notes Chapter 8: Refer to the CBSE Class 10 Science Notes Chapter 8 "How Do Organisms Reproduce?" The easiest way to quickly review and get ready for the upcoming CBSE Class 10 Science Board Exam is with these notes.

These brief reviews of CBSE Class 10 Science Notes Chapter 8 are based only on the most recent NCERT Science Book and the updated CBSE Class 10 Science syllabus. With the aid of these CBSE Class 10 Science Notes Chapter 8 from here, students will be able to quickly review the entire chapter.

CBSE Class 10 Science Notes Chapter 8 Overview

Every living thing reproduces and multiplies to create children of the same type. A species' ability to reproduce is crucial to its survival and the continuation of life.

This chapter will teach us about the reproduction processes of various unicellular and multicellular species, including bacteria, algae, plants, animals, and humans. Acquire knowledge of the many reproductive structures and the various methods of reproduction, including vegetative, asexual, sexual, and cell division.

CBSE Class 10 Science Notes Chapter 8

Reproduction

All organisms expand in number and population through the process of reproduction.

Asexual Reproduction

Reproduction using a single organism is known as asexual reproduction. On its own, a single creature can reproduce two or more times. All unicellular species, certain multicellular organisms, and certain plants exhibit this.

Sexual Reproduction

A male and a female are the two persons involved in the reproductive mode. They generate gametes, or sex cells, which combine to create a new organism.

Asexual Reproduction

Fission

In most unicellular organisms, fission is a prevalent form of asexual reproduction. Binary fission, such as that of paramecium, occurs when the fission produces two daughter cells.

Multiple fission (e.g., Plasmodium) is the term used to describe fission that produces numerous daughter cells.

Various species may have distinct fission planes.

Budding

A form of asexual reproduction known as budding occurs when a little structure resembling a cyst forms on the body of the parent, giving rise to a new individual.

Buds have the option to split out and form their unique entity (hydra) or stay joined to the parent (yeast).

Regeneration and Fragmentation

The process by which an organism (such as a lizard) grows back a lost organ or body part is called regeneration.

An organism fragments into smaller parts by a process called fragmentation, and each piece develops into a brand-new organism.

Planaria, Hydra, etc.

Spore Formation

Some organisms, like fungus, produce spores that, when released from their fruiting bodies, can develop into entirely new individuals. Sporangia are the organs that create spores. They are shielded from the elements by a substantial outer covering. Spores germinate and start to grow when they are exposed to the right environment.

Vegetative Propagation

In plants, asexual reproduction occurs in this way.

A new plant is created by the vegetative elements of the plant, such as the leaves, stems, and roots.

Propagation of vegetation can be done naturally or artificially.

Leaf (e.g., bryophyllum), stem (e.g., turmeric, ginger), runners/stolon (e.g., grass runners, strawberry), bulbs (e.g., onion, lily), etc. are some of the ways that natural vegetative propagation occurs.

Plant tissue culture, cutting, grafting, and layering are examples of artificial techniques.

Sexual Reproduction

In eukaryotic organisms, there are two forms of cell division:

Mitosis

occurs in somatic cells

preserves the number of chromosomes

yields a pair of diploid daughter cells.

Essential for development and growth, asexual reproduction, cell replacement, and regeneration

Meiosis

occurs in sexual cells

cuts the chromosomal count in half

yields four haploid daughter cells.

necessary for the development of gametes, or sexual reproduction

The Reproductive System

The reproductive systems of males and females in humans are remarkably different. The primary reproductive organ in males, the testes, is where sperm (male gametes) and ovum (female gametes) are created. Now let's take a closer look at the human reproductive systems of men and women.

Male Reproductive System

The two testes are the primary reproductive organ in males.

They create both the male sex hormone testosterone and the male sex cells known as sperms.

Male Primary Reproductive Organ

The two testes are the primary reproductive organ in males.

The structural and functional unit of these is seminiferous tubules, which are found in scrotal sacs found outside the body.

Sperm, or male sex cells, develop in the epididymis after being created by seminiferous tubules.

The hormone testosterone is secreted by Leydig cells, also known as interstitial cells, which are found between the seminiferous tubules.

Male Accessory Reproductive Organs

The reproduction process is assisted by several auxiliary reproductive organs.

The reproductive system includes organs that produce semen and feed sperm, including the prostate gland and seminal vesicles.

The urethra passes through the penis, which is why it is referred to as a copulatory organ.

Male Ducts

The urethra and vas deferens are the principal ducts in males.

Sperm from each testis is transported by a single vas deferens to the urethra.

Urine and semen share the same route through the urethra.

Female Reproductive System

The fallopian tubes/oviducts, two ovaries, and auxiliary organs like the uterus and vagina make up the human female reproductive system.

Female Primary Reproductive Organ

The two ovaries are a woman's primary reproductive organs. In addition to producing the female sex chemicals progesterone and estrogen, they also generate the female sex cells known as eggs, or ova.

Menstrual Cycle

Menstruation

The cyclical event of the ovum's release from the ovary and its evacuation from the body in the absence of fertilization is known as menstruation.

The uterus's blood-rich endometrium degrades during menstruation as the ovum is taken out of the body.

Menstruation is regulated by two pituitary hormones, LH and FSH, and two ovarian hormones, progesterone and estrogen.

The cycle repeats itself every 28 days in humans.

Fertilization

Human Reproduction

Sexual reproduction is used by humans. Both the female and the male generate eggs and sperm. A new progeny is created when the sperm and egg combine to form a zygote.

Contraceptive Methods

Reproductive Health

The prevention of STDs and unintended pregnancy is the focus of reproductive health. Reproductive health awareness also includes knowledge of the reproductive system.

Contraceptives

Devices known as contraceptives assist people to avoid STDs and prevent unintended pregnancies.

There are many different kinds of contraceptives, including hormonal/chemical treatments, mechanical barriers, surgical methods, etc.

Rhythm Method

Avoiding coitus when a female is fertile and has a high possibility of fertilization is another unreliable form of contraception.

Diaphragms

Barriers called diaphragms can be inserted into the female reproductive system. They inhibit conception by obstructing the entrance of semen into the female reproductive tract.

Contraceptive Pills

Chemical methods of contraception include tablets. They alter the body's hormone levels, which stop the ovaries from releasing the ovum.

IUD

Intrauterine Device is referred to as IUD. They have a few years of use left in them. It's a gadget that gets put into the uterus to alter its structure and stop the zygote from successfully implanting.

Reproduction in Plants

Plants can reproduce sexually or asexually. In plants, one kind of asexual reproduction is called vegetative propagation. Now let's study plant sexual reproduction.

Sexual Reproduction in Flowering Plants

Plants reproduce sexually through their blooms. Important flower whorls like the androecium and gynoecium aid in a plant's ability to reproduce sexually.

Non-Essential Parts of Flowers

There are necessary and non-essential whorls in the conventional floral structure. Since petals and sepals do not directly contribute to reproduction, they are referred to as non-essential whorls. When in bud condition, sepals protect the inner fragile whorl and, if green in hue, carry out photosynthesis. When petals are tinted, pollinating insects are drawn to them.

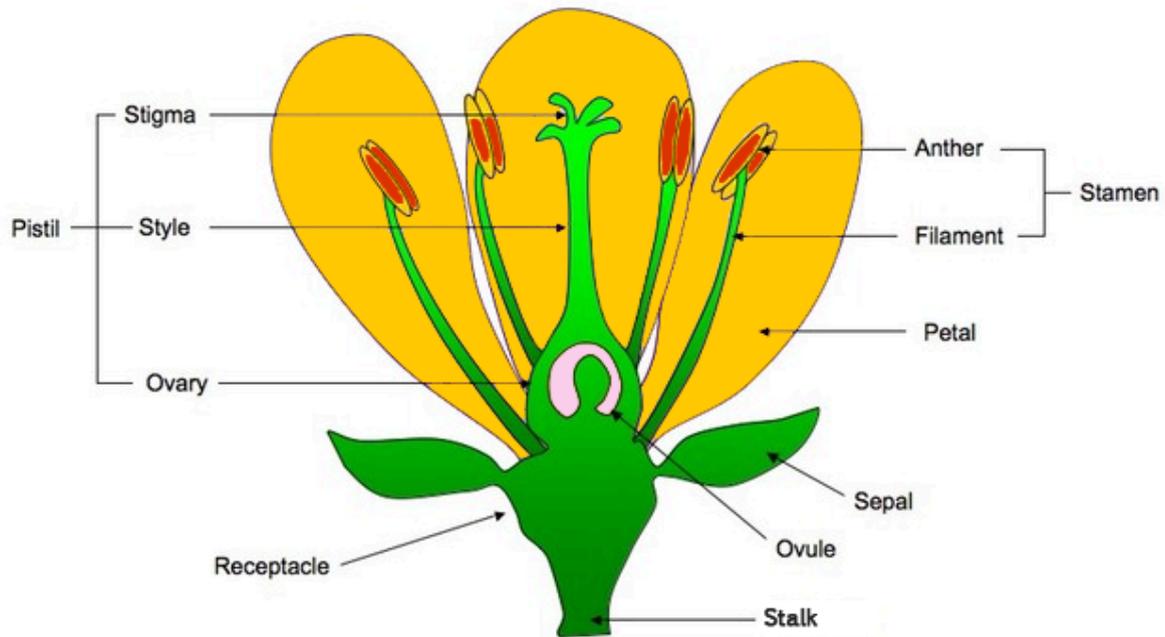
Essential Whorls of Flowers

The reproductive and essential whorls of a flower are called the androecium and gynoecium. The gynoecium generates ovules, which are female gametes, and the androecium produces pollen grains, which carry male gametes. Unisexual flowers only have one whorl, whereas bisexual flowers have both.

Each androecium member is referred to as a stamen and is made up of an anther and filament.

Haploid pollen grains are produced by anthers.

Each gynoecium component—which consists of an ovary, stigma, and style—is referred to as a pistil.



Parts of a flower

Fertilization

Fertilization is the fusing together of male and female gametes.

Following pollination, pollen grains on the pistil's stigma surface germinate to produce two male nuclei in flowering plants.

An egg cell and two polar nuclei make up an ovule.

A triploid endosperm is created when one male nucleus unites with two polar nuclei.

The zygote that develops into the embryo and eventually plant is created when the egg cell and another male nucleus combine.

The ovary develops into the fruit and the ovules produce seeds following fertilization. Every other component ages out.