

# 8th Standard- Science

## Reproduction in Animals

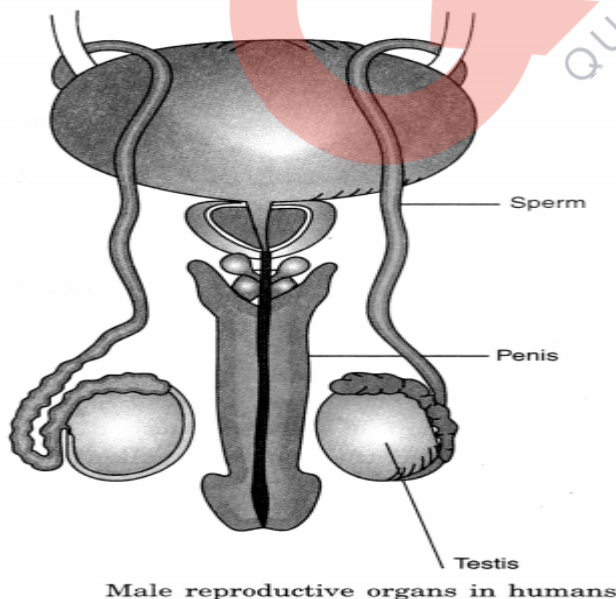
Reproduction: It is one of the important life processes, which ensures the continuation of similar kinds of individuals (species) generation after generation.

Modes of Reproduction: There are two modes by which animals reproduce. These are

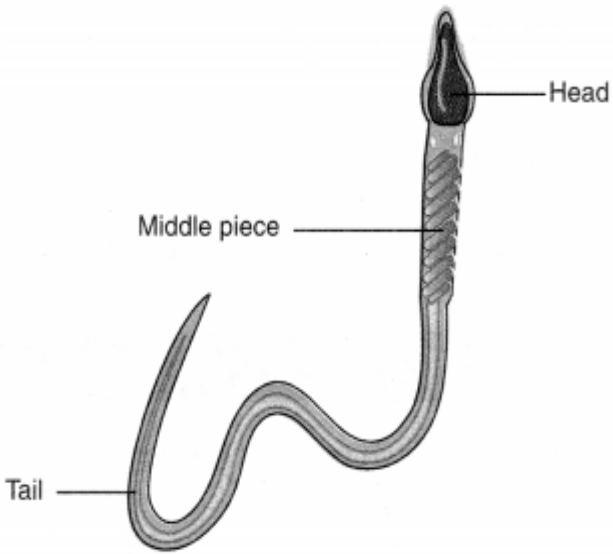
- Sexual reproduction and
- Asexual reproduction.

### Sexual Reproduction

**Male Reproductive Organs:** Male reproductive organs are a pair of testes, sperm ducts, and a penis.

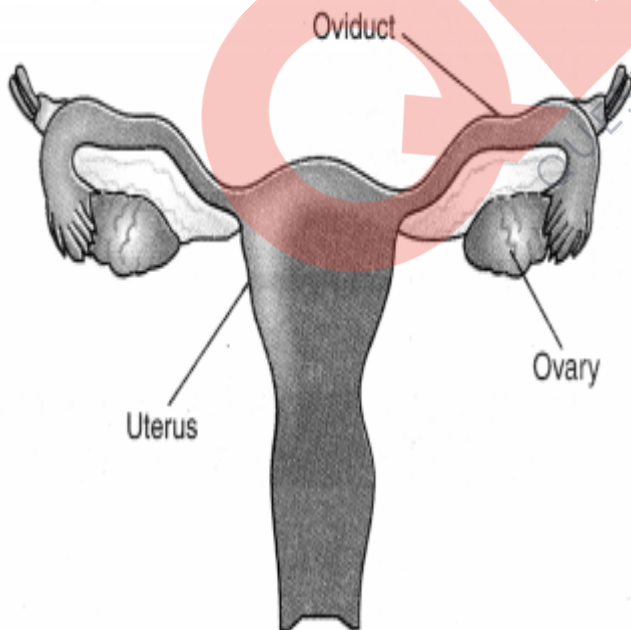


**Sperms:** The testes produce the male gametes called sperms.



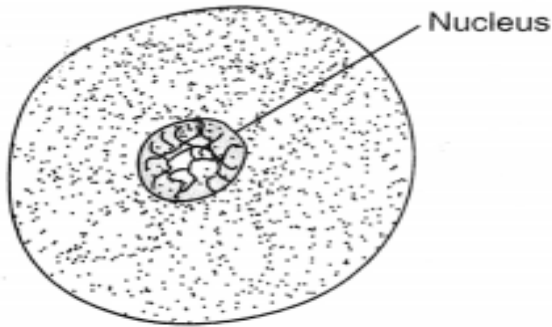
Human sperm

**Female Reproductive Organs:** The female reproductive organs are a pair of ovaries, oviducts (fallopian tubes) and the uterus.



Female reproductive organs in humans

**Ova:** Ovary produces females gametes called ova (Egg).



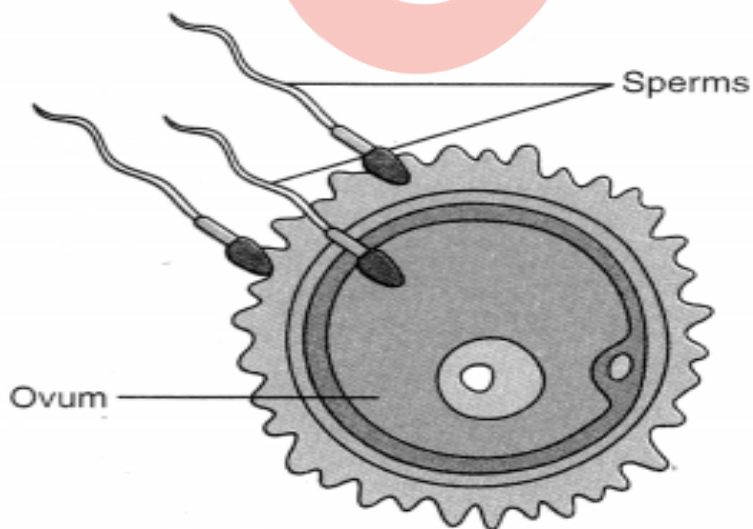
Human ovum

In human beings, a single matured egg is released into the oviduct by one of the ovaries every month.

Uterus is the part of the female reproductive system where the development of the embryo takes place.

Both sperm and ova are single-celled structure.

The fusion of the ovum and the sperm is called fertilisation.

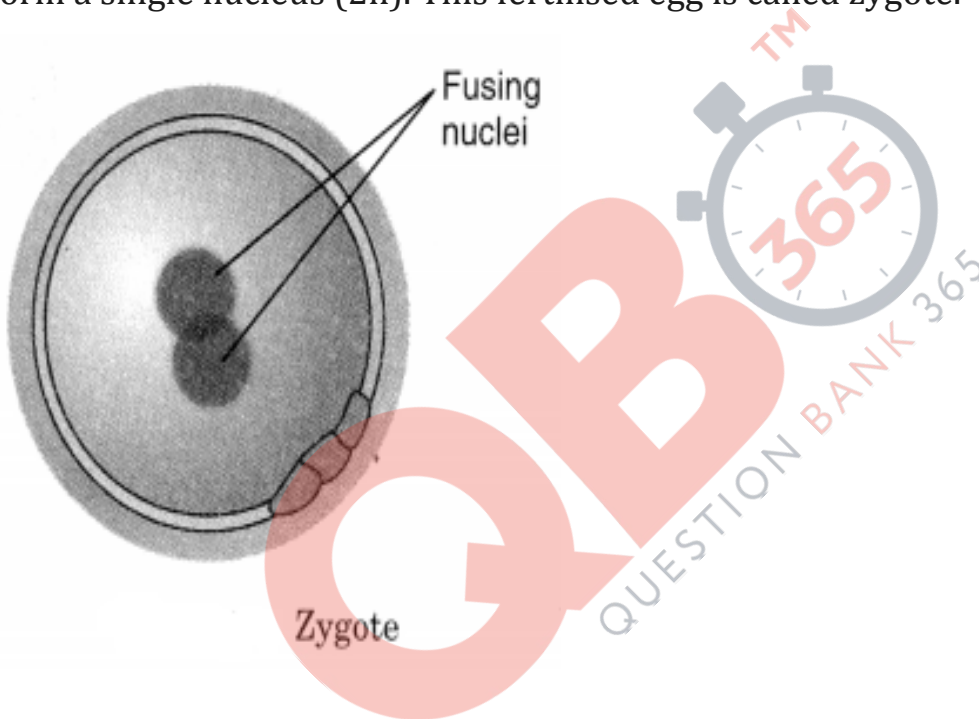


Fertilisation

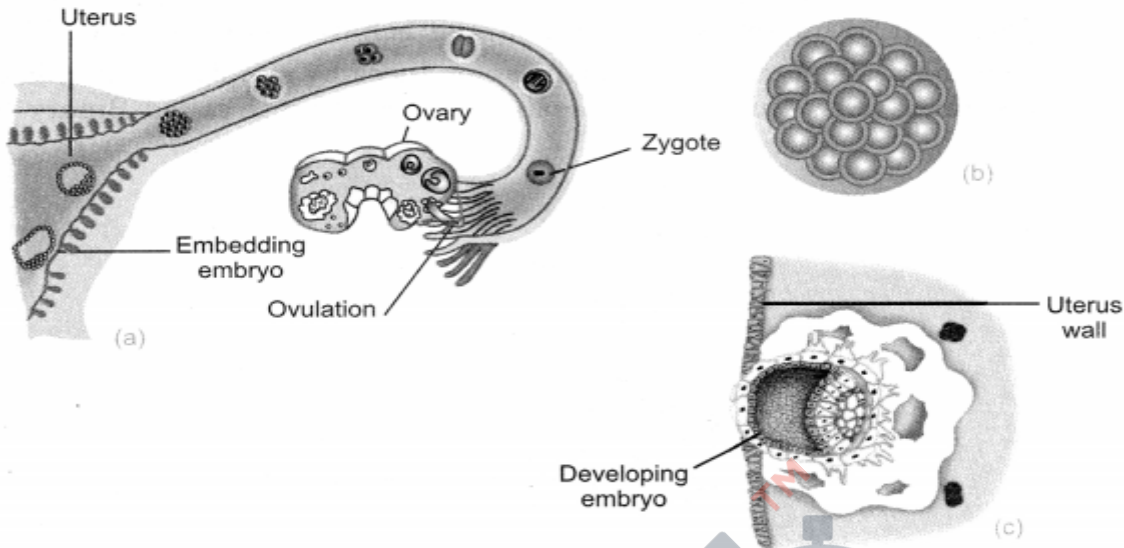
Fertilisation which takes place inside the female body is called internal fertilisation.

Fertilisation which takes place outside the body of the female is called external fertilisation.

During fertilisation, the nuclei of the sperm ( $n$ ) and the egg ( $n$ ) are fused to form a single nucleus ( $2n$ ). This fertilised egg is called zygote.



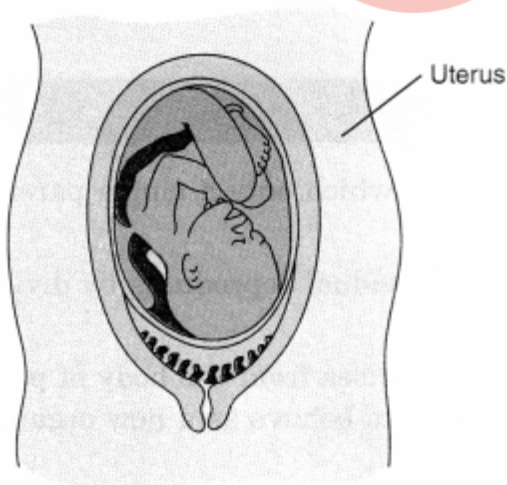
The zygote divides repeatedly to give rise to a ball (mass) of cells. The cells then begin to differentiate into various tissues. This developing structure is called an embryo.



- (a) Zygote formation and development of an embryo from the zygote
- (b) Ball of cells (enlarged)
- (c) Embedding of the embryo in the uterus (enlarged)

The embryo gets implanted within the wall of the uterus, i.e., endometrium for further development.

The stage of the embryo in which all the body parts are identifiable is called a foetus.

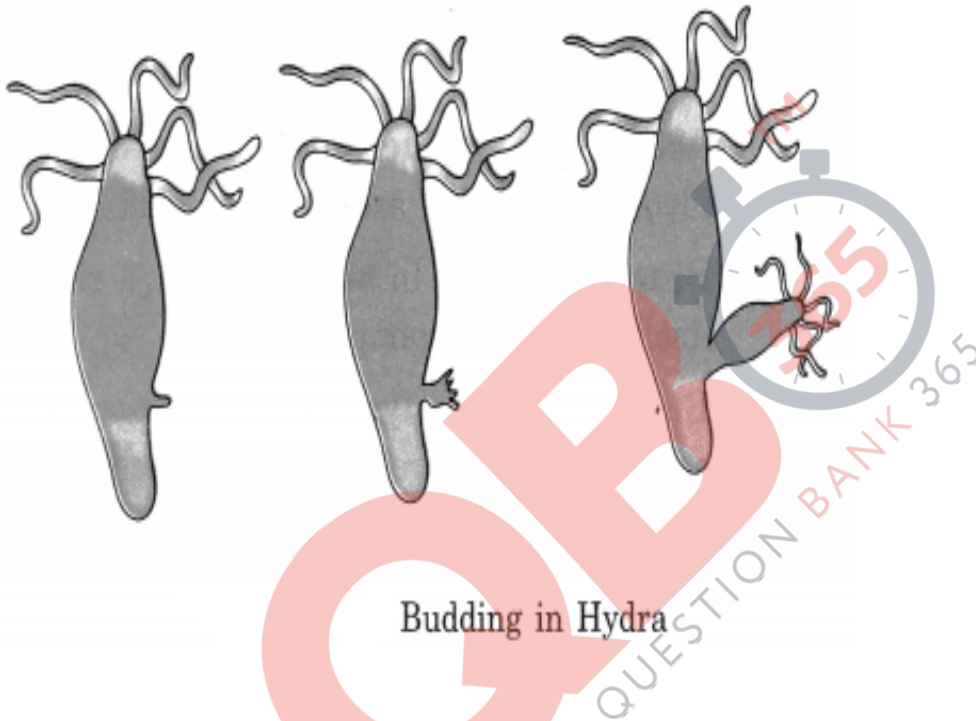


Foetus in the uterus

The animals which give birth to young ones are called viviparous animals.

The animals which lay eggs are called oviparous animals.

The transformation of larva into an adult through drastic changes is called metamorphosis.

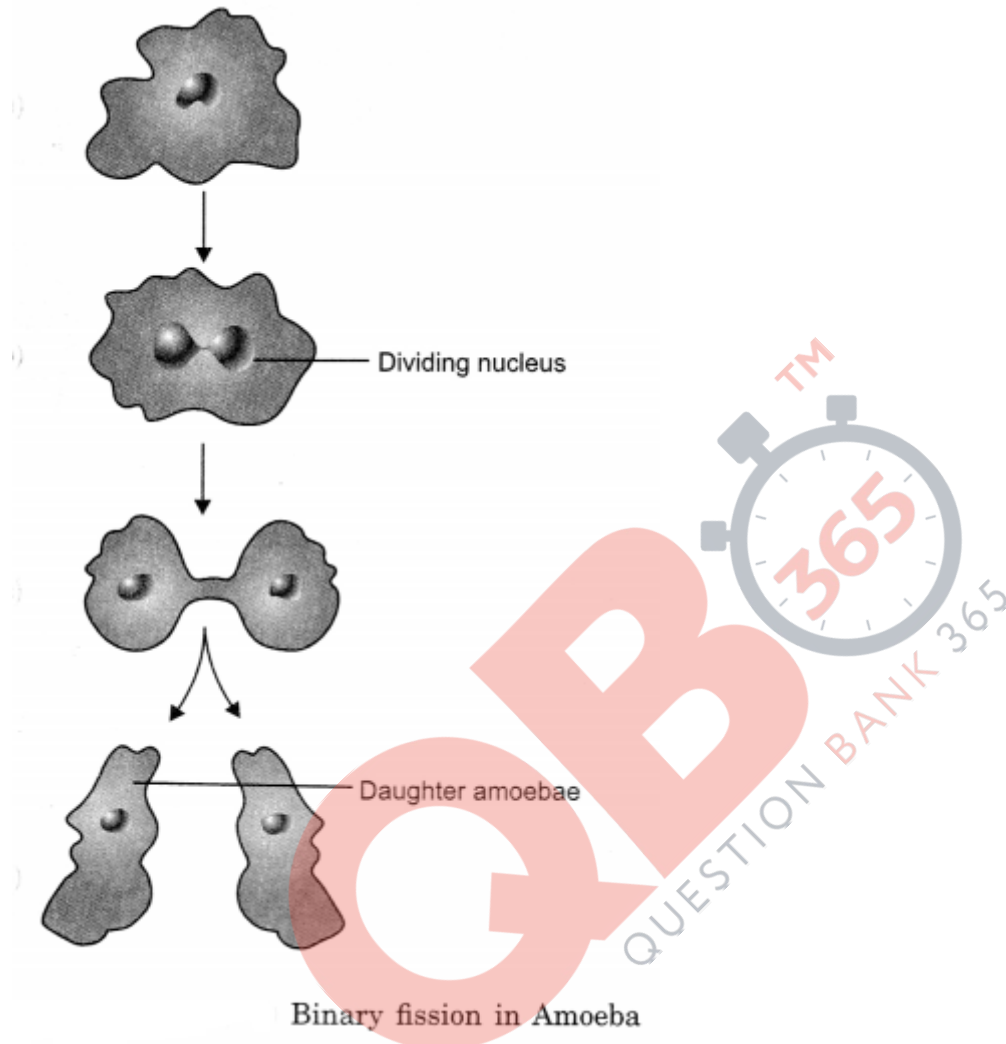


### **Types of Asexual Reproduction**

In small animals like a hydra, new individuals develop from buds. This method of asexual reproduction is called budding.

**Bud:** A lateral outgrowth from the parent body that assumes the shape of parent. It ultimately gets detached and behaves as a new individual.

Amoeba a single-celled organism, reproduces by simply dividing itself into two daughter cells. This type of asexual reproduction is called Binary fission.



**Asexual Reproduction:** The type of reproduction in which only a single parent is involved, is called asexual reproduction.

**Binary Fission:** In binary fission, a single-celled individual reproduces by dividing itself into two. Example: Amoeba.

**Budding:** In this type of reproduction, a lateral bud arises from the body of the parent organism, it matures and gets detached from the body to behave as a new organism.

**Eggs:** Eggs (or Ova) are female gametes.

**Embryo:** Zygote, during its development, divides repeatedly to form a ball of cells. The cells then form groups to form tissues and ultimately organs of the body. This structure is called embryo.

**Fertilization:** The fusion of ovum and the sperm is called fertilization.

**Internal Fertilisation:** Fertilisation that takes place inside the female body is called internal fertilisation. This is observed in human beings and other animals such as cows and dogs.

**External Fertilisation:** Fertilisation that takes place outside the female body is called external fertilisation. This is common in aquatic animals such as frogs, fish, starfish, etc.

**Foetus:** It is the stage of embryo in which all the body parts are identifiable in its developmental stage.

**Viviparous:** Animals such as human beings, cows and dogs which give birth to the young ones are called Viviparous animals.

**Oviparous:** Animals such as hen, frog and butterfly which lay eggs are called oviparous animals.



**Tadpoles:** In the life process of a frog, we find three distinct stages, that is egg → tadpole → adult. These tadpoles get transformed into adults which are capable of jumping and swimming, and are finally transformed into frog.

**Metamorphosis:** The drastic change which transforms a larva into an adult in case of frog is called metamorphosis. •

**Sexual Reproduction:** The process of reproduction, which results from the fusion of male and female gametes is called sexual reproduction.

**Sperms:** The male gametes.

**Ova:** The female gametes.

**Zygote:** The nuclei of sperm(n) and egg(n) are fused during fertilization, to form a single nucleus. Egg after fertilization is called Zygote.

**Cloning:** Cloning is the creation of an organism that is an exact genetic copy of another. This means that every single bit of DNA is the same between the two organisms.