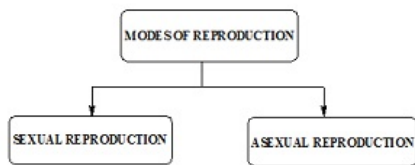


## Class 8 Biology Reproduction in Animals

## Introduction

### Introduction

The phenomenon of producing young ones in living organisms is called reproduction. It ensures the continuation of species generation after generation. Reproduction can be categorized into two different categories:



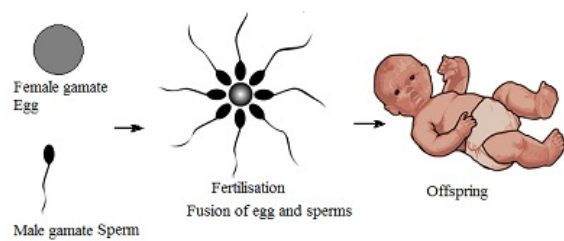
**Fig.** Young ones of human beings

## Class 8 Biology Reproduction in Animals

## Sexual Reproduction

### Sexual Reproduction

- The male and the female reproductive parts produce their respective gamete which fuse together and undergoes several changes to develop into a new individual. This method of reproduction is called sexual reproduction.
- The animals that directly give birth to their young ones are called viviparous animals. For example, Human beings, dogs, cats, etc.
- Whereas the animals that lay eggs to give birth to their young ones are called oviparous animals. For example, snakes, birds, etc.



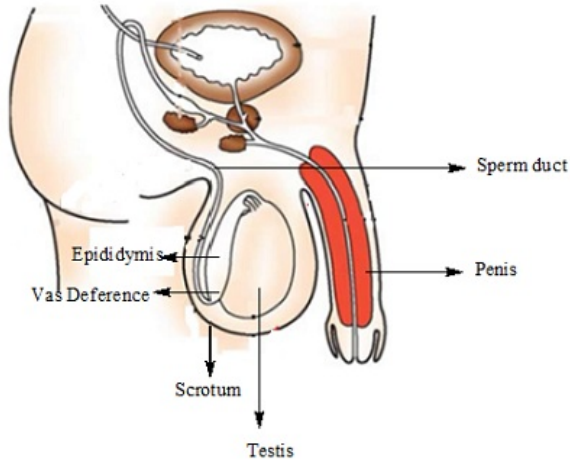
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## Class 8 Biology Reproduction in Animals

## Male reproductive organ

### Male reproductive organ

The male reproductive system includes following parts:



A pair of testes (Produce sperm and male hormone i.e. testosterone)

Two sperm ducts

Scrotum (Protects testes and maintains a temperature lower than body temperature)

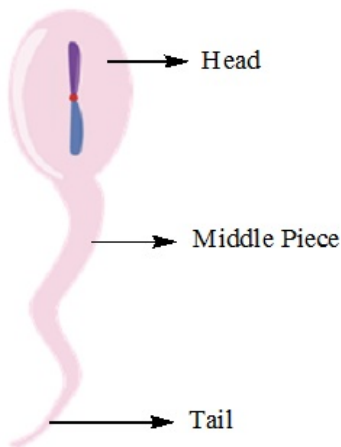
Epididymis (Stores sperms and helps in the passage of sperms)

Vas deference (tube like structure that emerges from the lower part of epididymis and opens to the ejaculatory duct)

Penis (muscular organ that discharge the sperms when stimulated)

Male gametes called sperms (produced by testes)

The sperms are small sized and contain following parts:



A head (contains the nucleus containing chromatin fibre. It contains enzymes used for penetrating the female egg).

A middle segment (provide the energy for the flagellar movement of sperm)

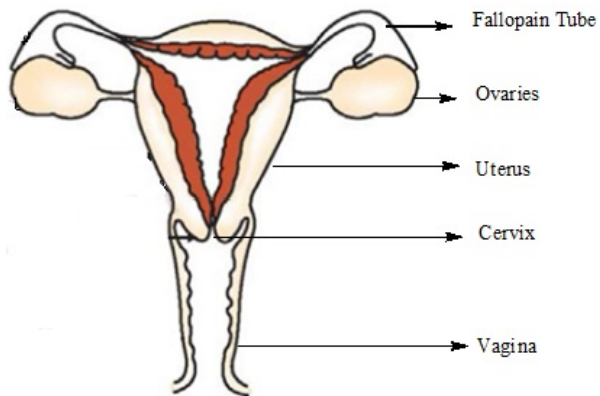
A tail (consists of only the 9+2 structure of the axoneme that contains many proteins and protein complexes required for the proper functioning of sperms)

## Class 8 Biology Reproduction in Animals

## Female reproductive organ

### Female reproductive organ

The female reproductive system includes the following parts:



A pair of ovaries (Produce female sex cell i.e. ovum and female hormone i.e. estrogen and progesterone)

Fallopian tubes (Receives ovum from ovary)

Uterus (development of baby takes place)

Female gametes called ova (produced by ovary)

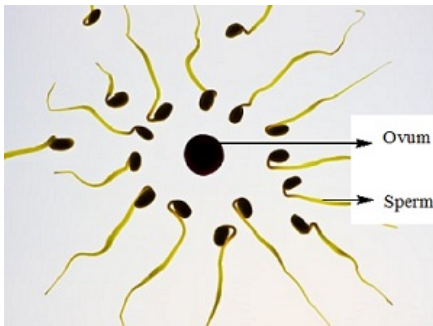
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## Class 8 Biology Reproduction in Animals

## Process involved in Sexual reproduction

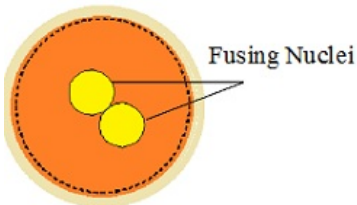
### Process involved in Sexual reproduction

- Every month eggs are released from the ovaries in a female reproductive system. This phenomenon is called ovulation.
- The first step is the fusion of a sperm from male and an ovum from female. This is called fertilization.

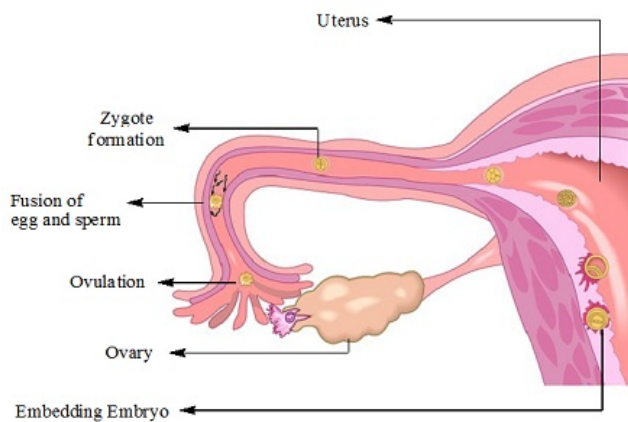


**Fig.** Fertilization

- During the fertilization the nucleus of a sperm and ovum fuse and forms a single nucleus that develops into a fertilized egg or zygote.



**Fig.** Zygote



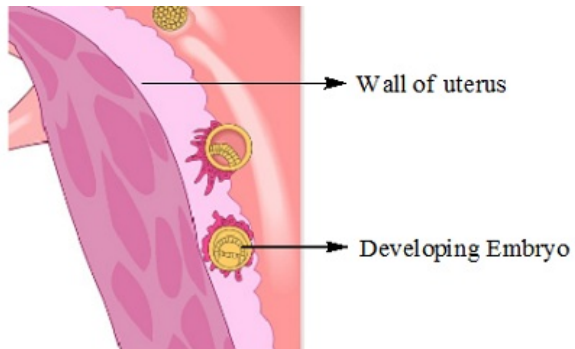
**Fig.** Zygote formation and development of embryo from zygote

- The zygote further undergoes repeated divisions and gives rise to ball of cells that form groups and develops into different tissues and organs of body. This structure is called embryo.



**Fig.** Repeated division of zygote to form embryo

It gets later gets embedded in the walls of uterus.



**Fig.** Developing Embryo

It develops the different body parts like hands, legs, eyes, ears, nose, etc. this phase of embryo when it has developed all its body parts is called foetus.



**Fig.** Foetus



**Fig.** A pregnant Woman

After complete development of embryo a new individual is born.



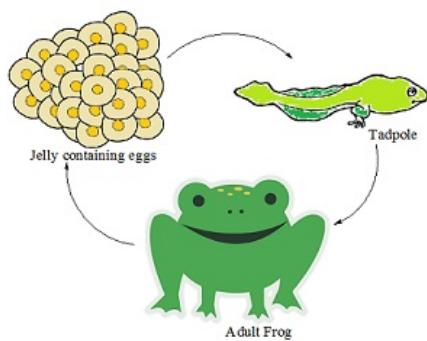
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## Class 8 Biology Reproduction in Animals

## Reproduction in frog

### Reproduction in frog

- In case of reproduction of frogs the male and female frog comes together.
- Female frog lays down the eggs. A layer of jelly holds and protects the eggs.
- The male frog deposits the sperms over the eggs laid by the female frog.
- The sperms swim in water using its long tail and comes in contact with the eggs.
- When the sperms comes in contact with the eggs they fuse that leads to the further development of the eggs into a new individual.
- This type of fertilisation in which the male and female gametes fuse outside the female body is called external fertilisation.



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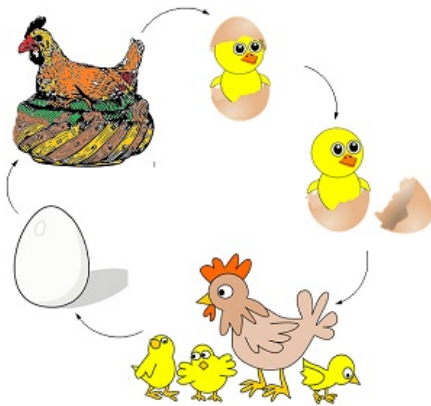


## Class 8 Biology Reproduction in Animals

## Reproduction in Hens

### Reproduction in Hens

- In case of hens the male and female gametes fuse together inside the body of hen.
- After the fertilization the zygote undergoes repeated division and travels down the oviduct.
- As the zygote goes down the oviduct it gets surrounded by many protective layers that gets hardened and we see it as the hard shell outside the egg.
- After the formation of hard shell around the developing embryo, the egg is laid out by the hen.
- It takes 3 weeks for the embryo to develop into a chicken.



**Fig.** Reproduction in Hens

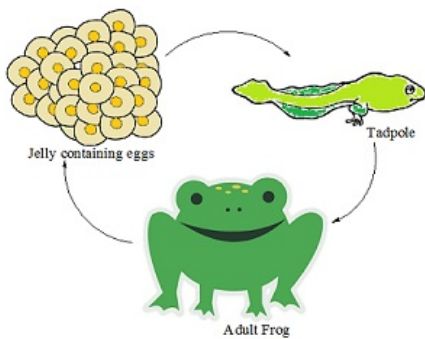
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## Class 8 Biology Reproduction in Animals

## Metamorphosis

### Metamorphosis

- The conversion of larva into an adult by undergoing through drastic changes is called metamorphosis.
- Let us consider the example of transformation of a tadpole into a frog.



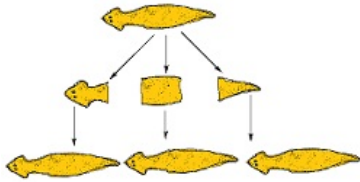
- As a tadpole develops into a frog it looks very different from the late tadpole and has different properties from tadpole.
- But in case of human beings the body parts and features of an adult are same as in their young ones.

## Class 8 Biology Reproduction in Animals

## Asexual Reproduction

### Asexual Reproduction

- The method of reproduction in which a new individual is developed from a single organism without the involvement of fusion of gametes is called asexual reproduction. The new individual inherits the features and genes of that parent only and possess no changes in the number of chromosomes.



**Fig.** Asexual reproduction in planaria

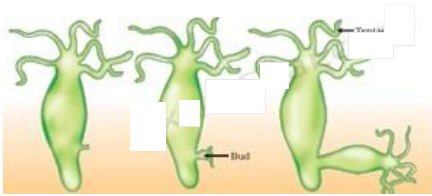
- The above figure represents the asexual reproduction in planaria which is free-living flatworms. As the figure shows when a planaria is cut into pieces, each piece regenerates and turns into a complete individual.
- The reproduction in hydra and amoeba are the examples of organisms undergoing asexual reproduction. In these organisms only one is involved in giving rise to a new individual.

## Class 8 Biology Reproduction in Animals

## Reproduction in Hydra

### Reproduction in Hydra

- Reproduction in hydra starts by the development of bulges called buds.
- The buds are the small outgrowths from a parent hydra that develops into a new hydra.
- As the new individual develops from buds the process of reproduction in hydra is called budding.

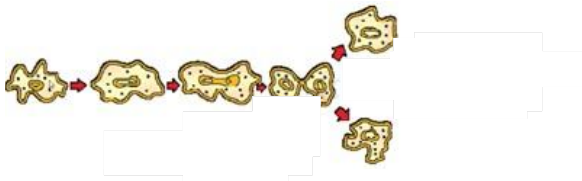


## Class 8 Biology Reproduction in Animals

## Reproduction in Amoeba

### Reproduction in Amoeba

- Amoeba is a single celled organisms that reproduces new individual of its type by dividing its nucleus into two nuclei.
- after division of the nucleus the body of amoeba divides into two parts with each individual part receiving a nucleus.
- The two separate bodies of amoeba develops into new individuals.
- This method of reproducing new individual by dividing into two individual is called binary fission.



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