Science PowerPoint Presentation

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Class:- VIII B

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Reproduction in Animal

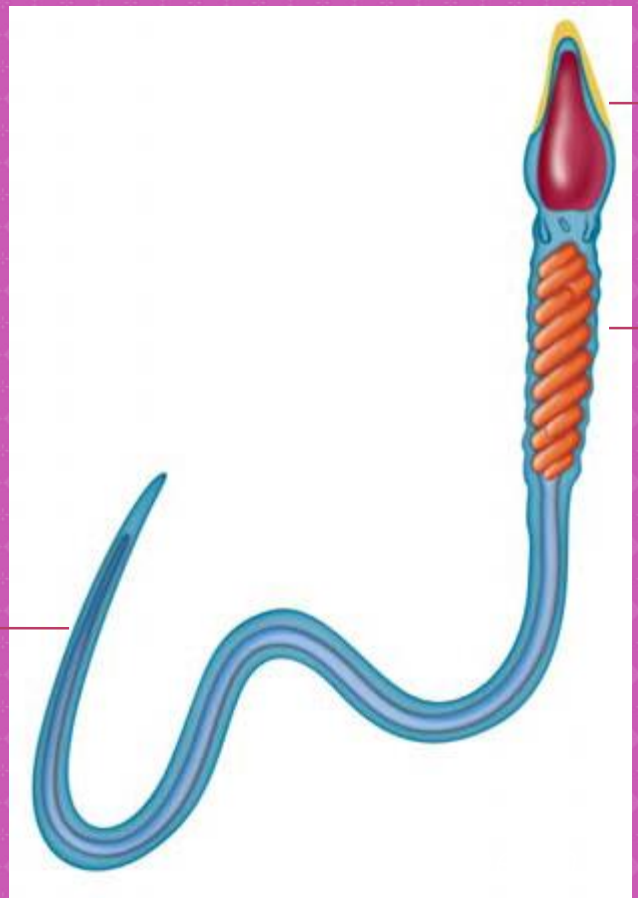
Modes of Reproduction

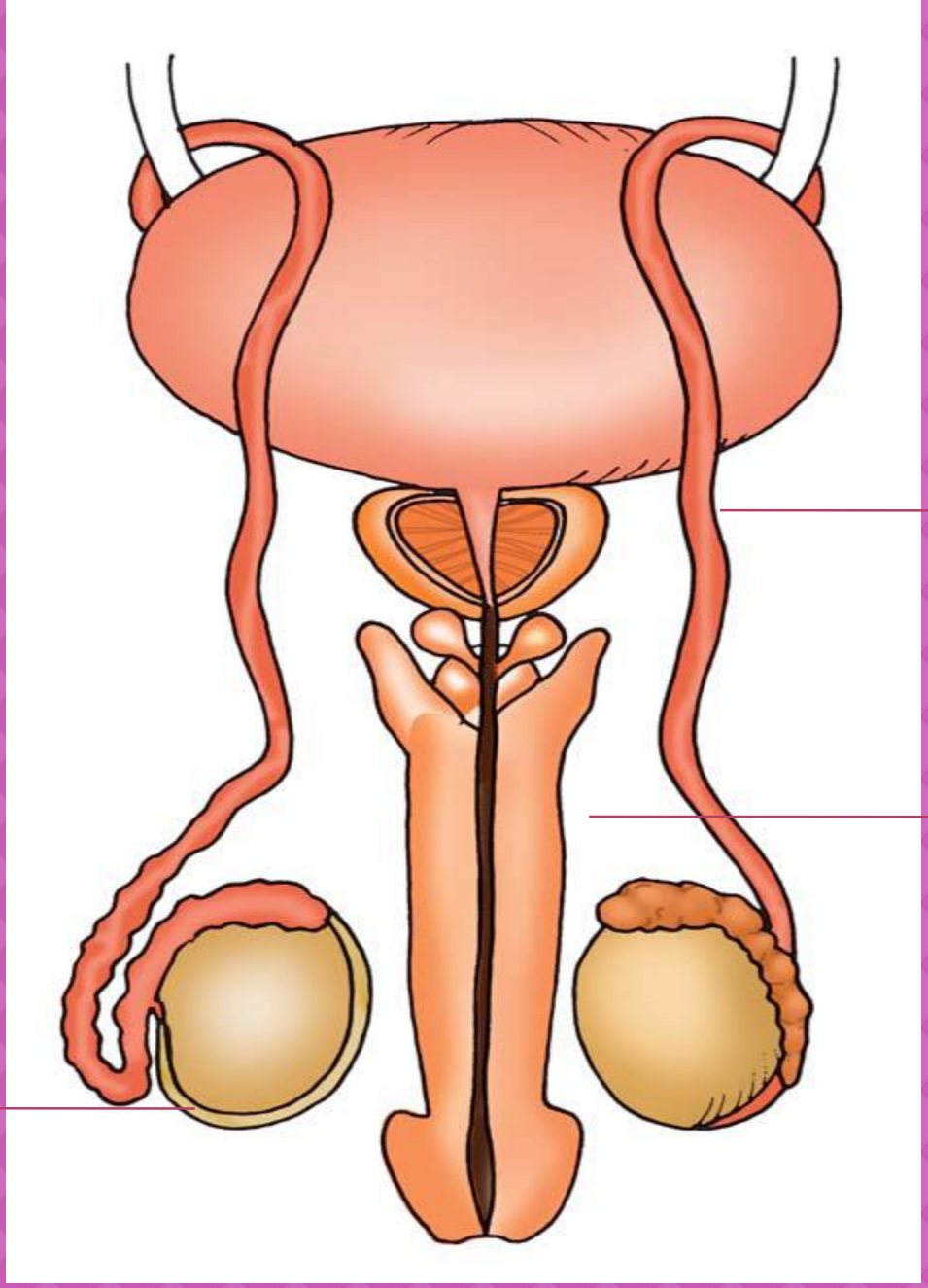
Sexual Reproduction

The reproductive parts in animals also produce gametes that fuse to form a zygote. It is the zygote which develops into a new individual. This type of reproduction beginning from the fusion of male and female gametes is called **sexual reproduction.**

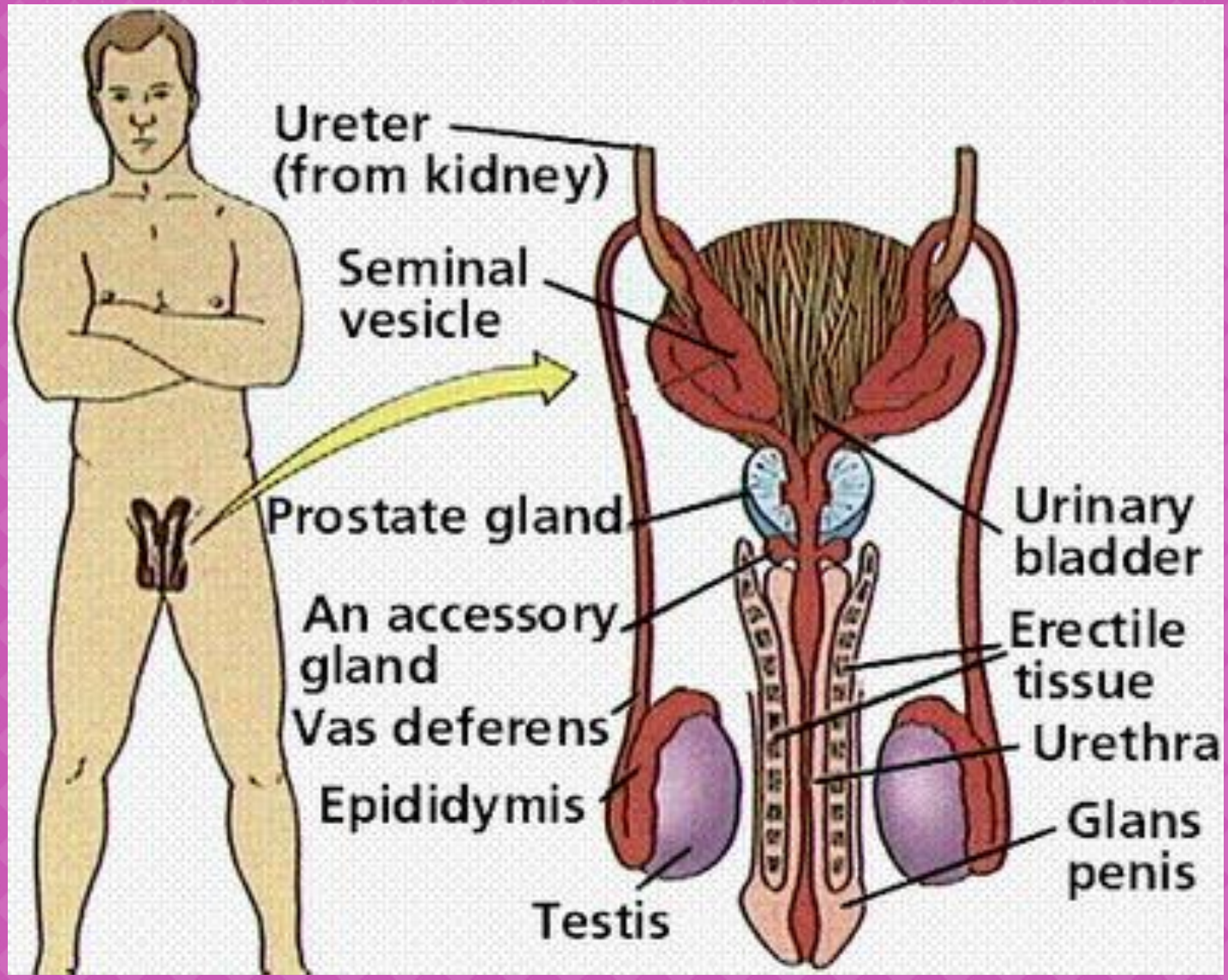
Male Reproductive Organs

The male reproductive organs include a pair of testes (singular, testis), two sperm ducts and a penis . The testes produce the male gametes called Sperm.



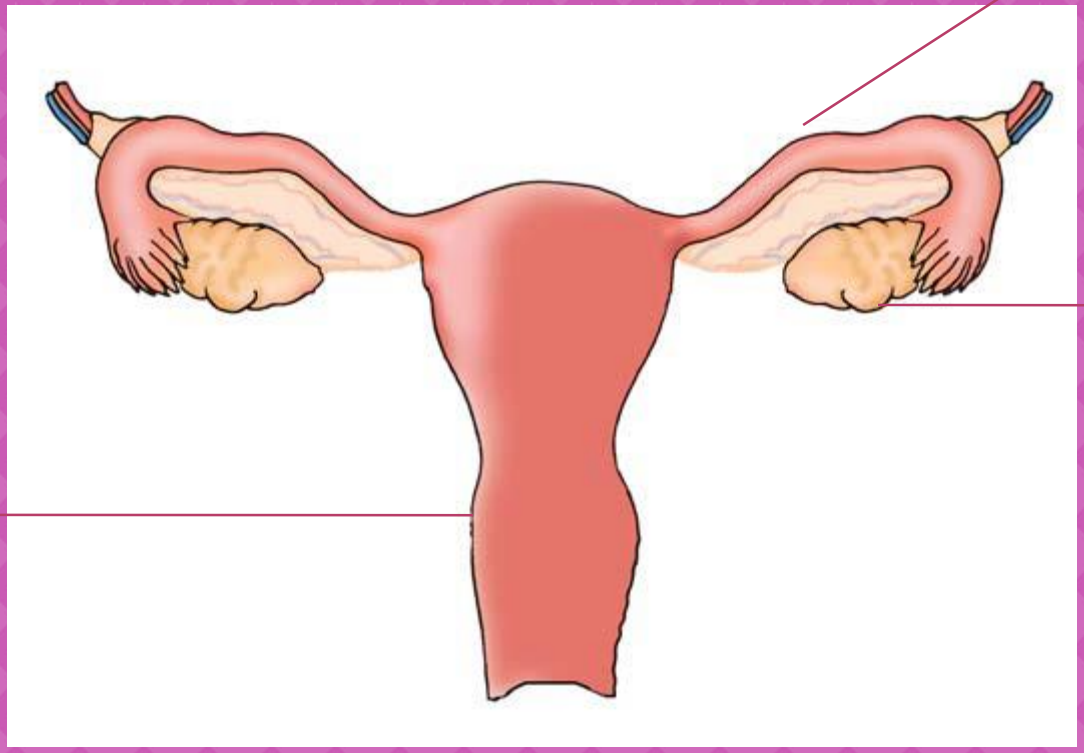


Male reproductive organs in humans

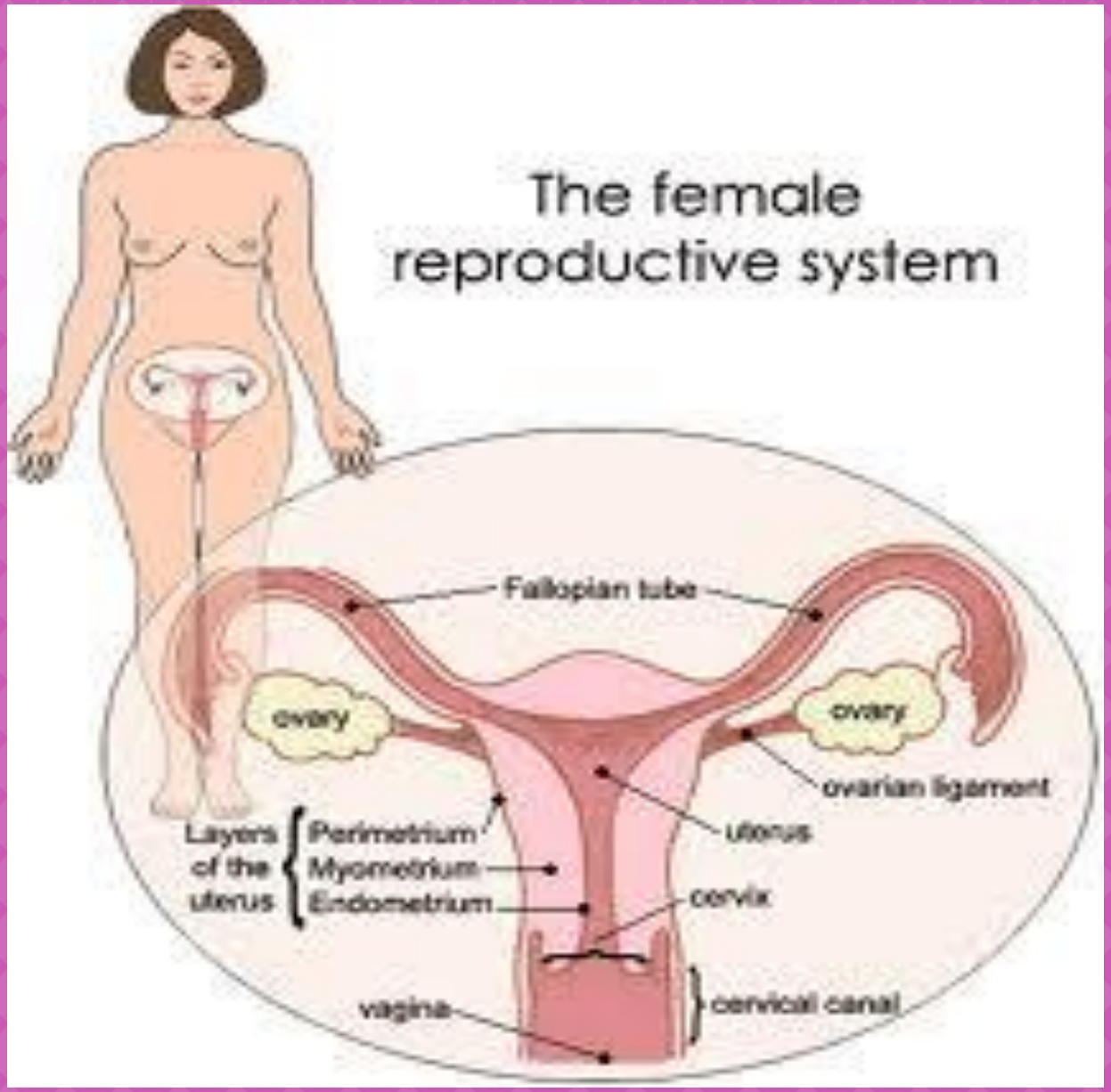

Ureter
(from kidney)
Seminal
vesicle
Prostate gland
An accessory
gland
Vas deferens
Epididymis
Testis
Urinary
bladder
Erectile
tissue
Urethra
Glans
penis

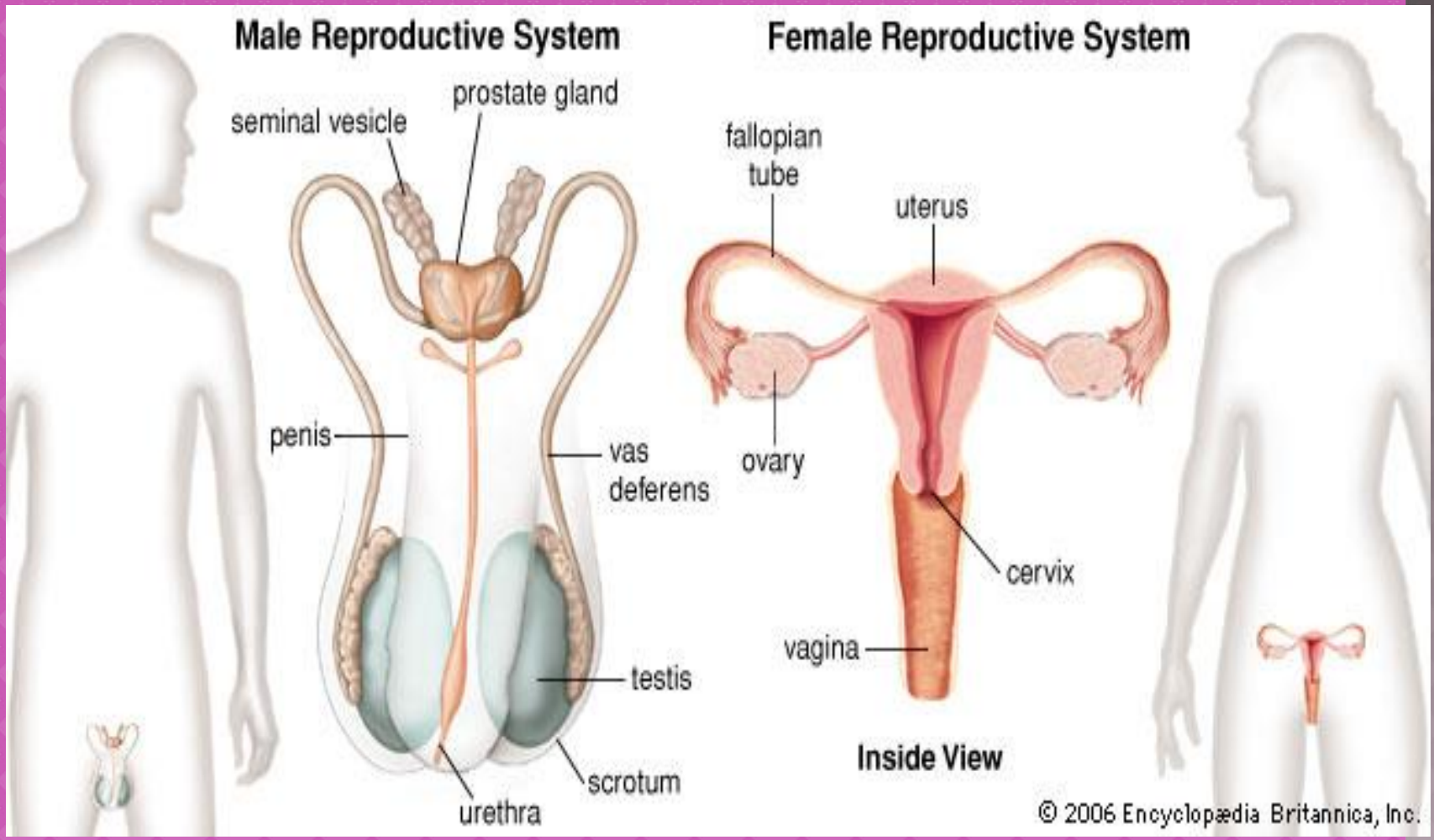
Female Reproductive Organs

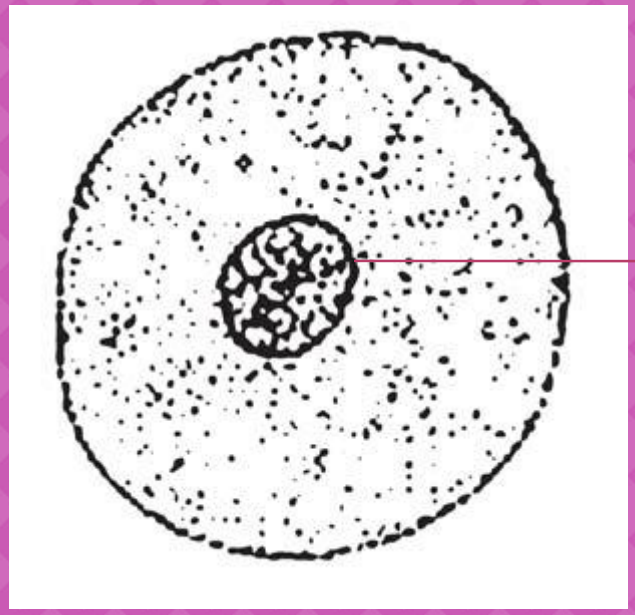
The female reproductive organs are a pair of ovaries, oviducts (fallopian tubes) and the uterus . Ovary produces female gametes called **ova (eggs)** . In human beings, a single matured egg is released into the oviduct by one of the ovaries every month. Uterus is the part where development of the baby takes place. Like the sperm, an egg is also a single cell.



Female Reproductive Organ


The female reproductive system
Fallopian tube
ovary
ovary
ovarian ligament
Layers of the uterus
Perimetrium
Myometrium
Endometrium
uterus
cervix
vagina
cervical canal


Male Reproductive System
seminal vesicle
prostate gland
penis
vas deferens
testis
scrotum
urethra
Female Reproductive System
fallopian tube
uterus
ovary
cervix
vagina
Inside View
© 2006 Encyclopædia Britannica, Inc.

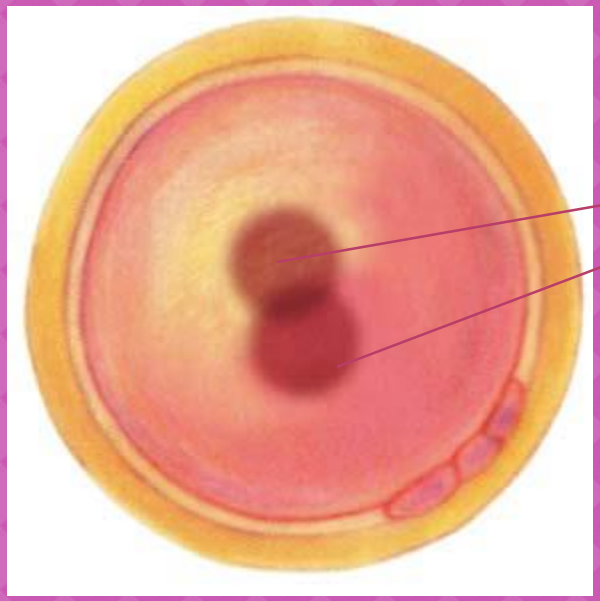


Human Ovum

Fertilization
The first step in the process of reproduction is the fusion of a sperm and an ovum. When sperms come in contact with an egg, **one of the sperms** may fuse with the egg. Such fusion of the egg and the sperm is called **fertilization .During** fertilization, the nuclei of the sperm and the egg fuse to form a single nucleus. This results in the formation of zygote.

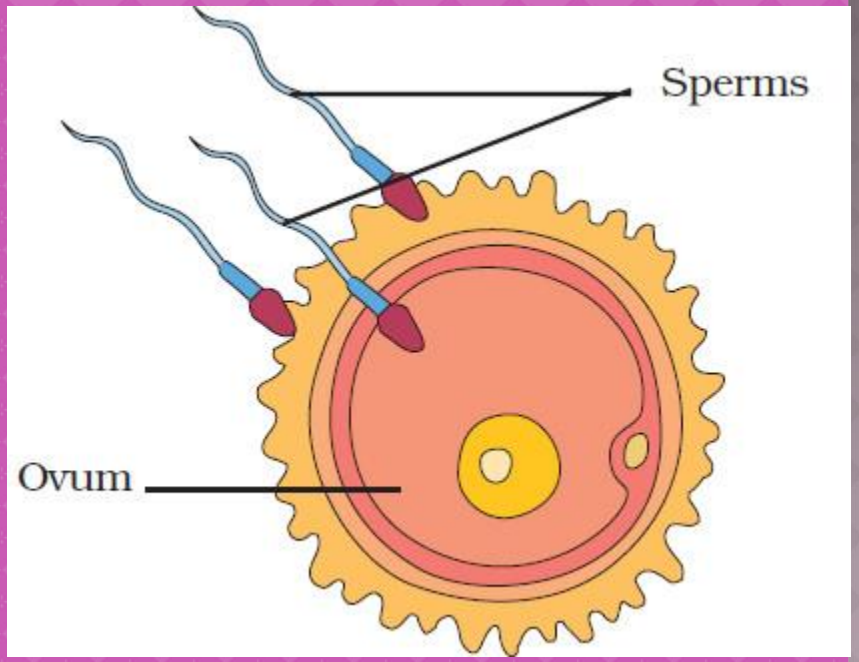
Internal fertilization
occurs in many animals including humans, cows, dogs and hens.

The process of fertilization is the meeting of an egg cell from the mother and a sperm cell from the father. So, the new individual inherits some characteristics from the mother and some from the father. Look at your brother or sister. See if you can recognise some characters in them similar to those of your mother or your father. Fertilization which takes place inside the female body is called **internal fertilization.**



Fusing nuclei

Zygote



TEST TUBE BABIES

In some women oviducts are blocked. These women are unable to bear babies because sperms cannot reach the egg for fertilization. In such cases, doctors collect freshly released egg and sperms and keep them together for a few hours for ***IVF or in vitro fertilization (fertilization outside the*** body). In case fertilization occurs, the zygote is allowed to develop for about a week and then it is placed in the mother's uterus. Complete development takes place in the uterus and the baby is born like any other baby. Babies born through this technique are called **test-tube babies. This term is actually** misleading because babies cannot grow in test tubes.

EXTERNAL FERTILISATION

During spring or rainy season, frogs and toads move to ponds and slow flowing streams. When the male and female come together in water, the female lays hundreds of eggs. Unlike hen's egg, frog's egg is not covered by a shell and it is comparatively very delicate. A layer of jelly holds the eggs together and provides protection to the Eggs As the eggs are laid, the male deposits sperms over them. Each sperm swims randomly in water with the help of its long tail. The sperms come in contact with the eggs. This results in fertilization. This type of fertilization in which the fusion of a male and a female gamete takes place outside the body of the female is called **external fertilization.**

It is very common in aquatic animals such as fish, starfish, etc.

Frog Eggs

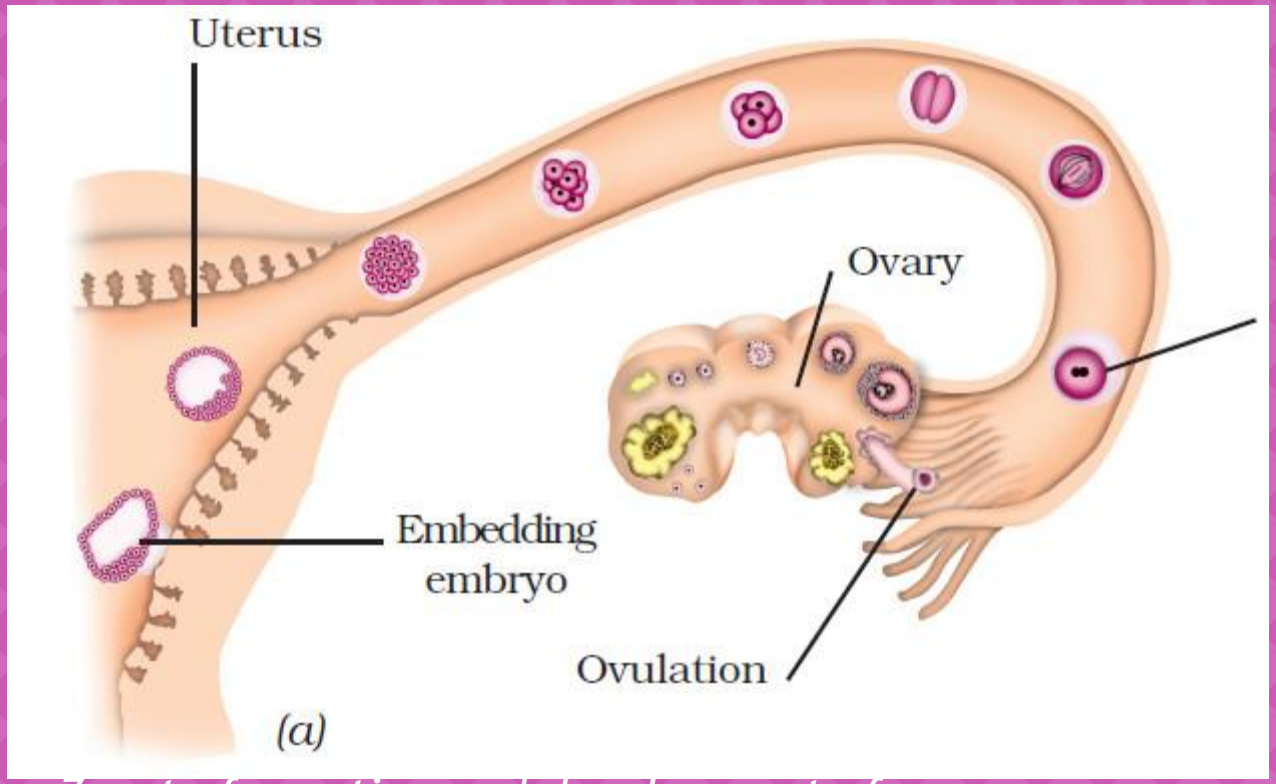
Interesting Fact

Though these animals lay hundreds of eggs and release millions of sperms, all the eggs do not get fertilized and develop into new individuals.
This is because the eggs and sperms get exposed to water movement, wind and rainfall. Also, there are other animals in the pond which may feed on eggs. Thus, production of large number of eggs and sperms is necessary to ensure fertilization of at least a few of them.

Development of Embryo

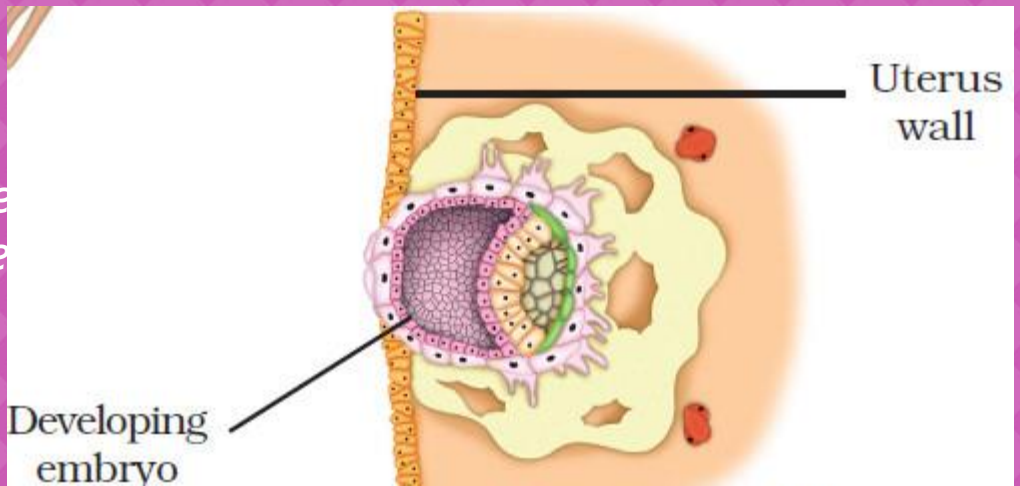
Fertilization results in the formation of zygote which begins to develop into an embryo .The zygote divides repeatedly to give rise to a ball of cells . The cells then begin to form groups that develop into different tissues and organs of the body. This developing structure is termed an **embryo. The** embryo gets embedded in the wall of the uterus for further development The embryo continues to develop in the uterus. It gradually develops the body parts such as hands, legs, head, eyes, ears, etc. The stage of the embryo in which all the body parts can be identified is called a **foetus .** When the development of the foetus is complete, the mother gives birth to the baby

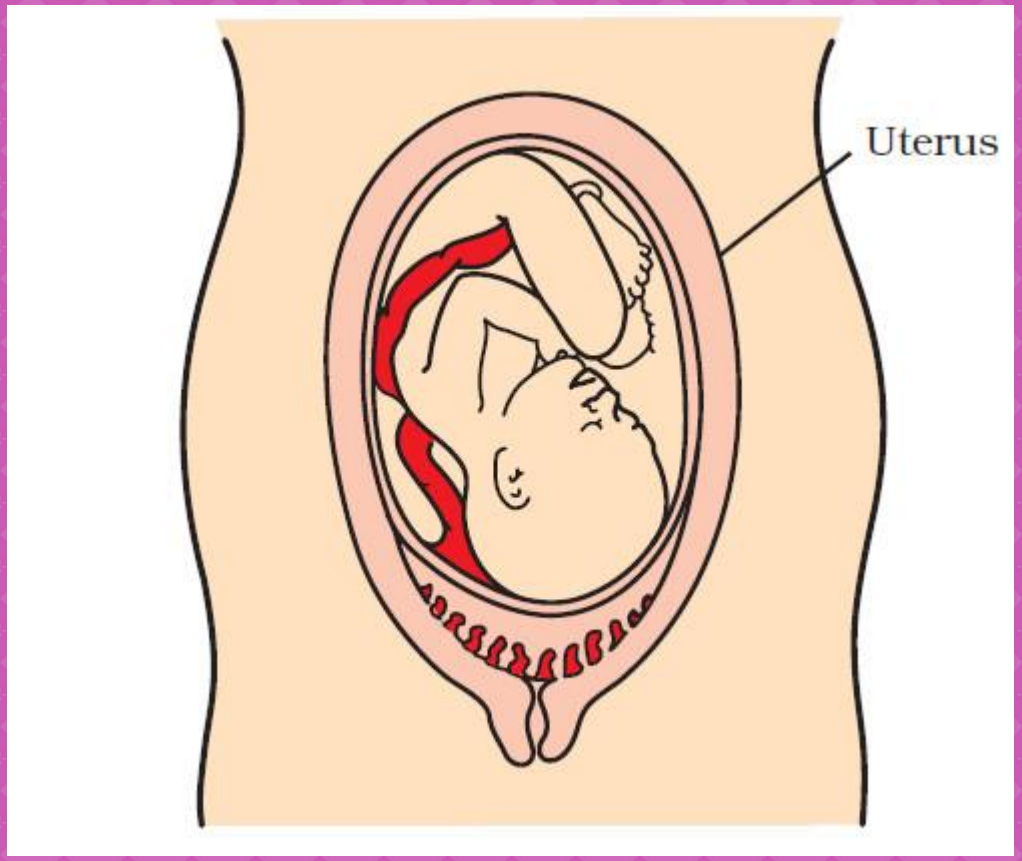
Ball of cells (Enlarge).



Zygote formation and development of an embryo from the zygote

Embedding of the e
the uterus (enlarge





Foetus in the uterus

Viviparous and Oviparous Animals

Some animals give birth to young ones while some animals lay eggs which later develop into young ones. The animals which give birth to young ones are called **viviparous** animals. Those animals which lay eggs are called **oviparous animals.** The eggs of a few animals are easy to collect because their mothers lay them outside their bodies. These animals from which you have collected the eggs are examples of oviparous animals. But you would not be able to collect the eggs of a dog, cow or cat. This is because they do not lay eggs. The mother gives birth to the young ones. These are examples of viviparous animals.

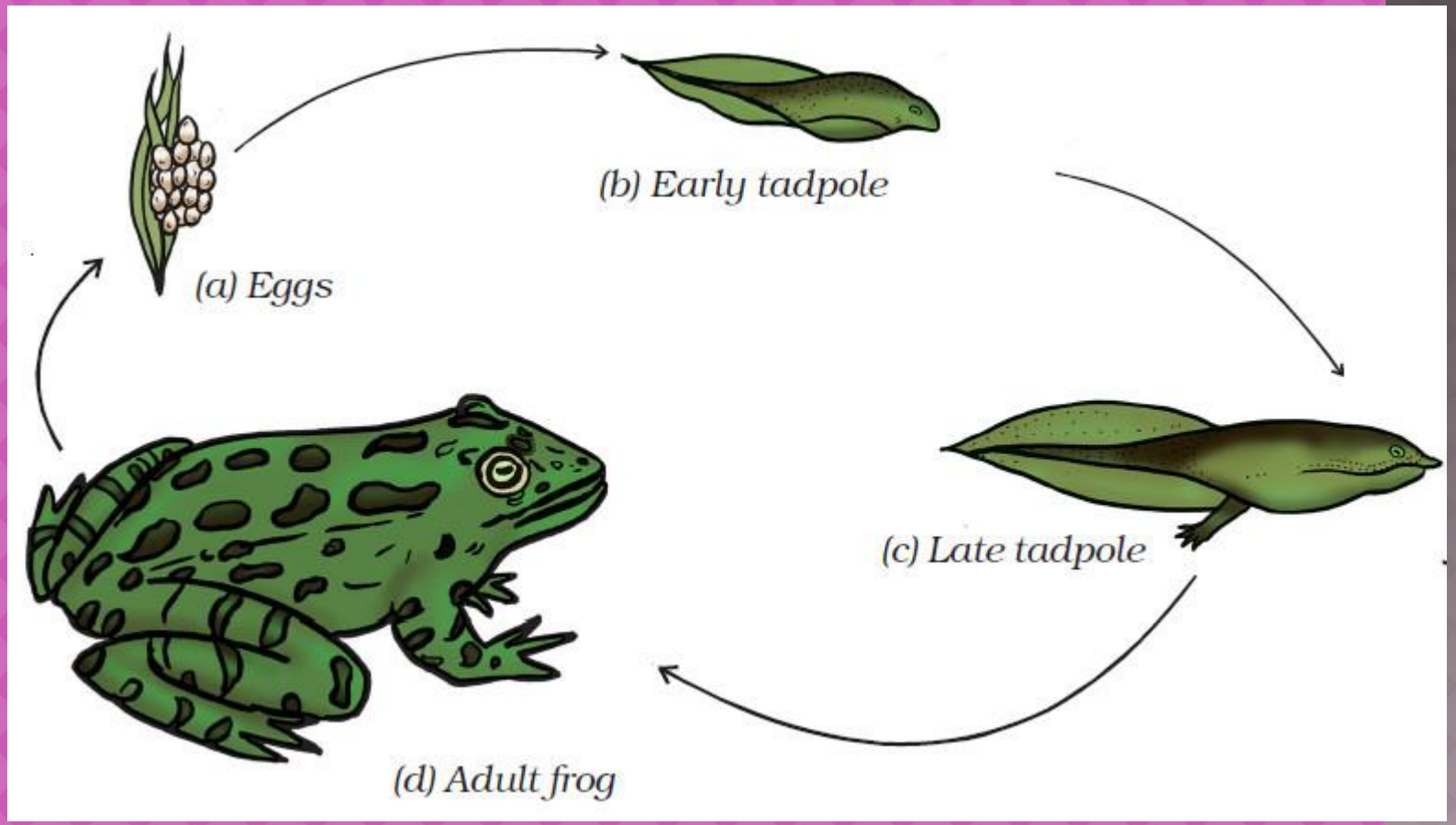
Young Ones to Adults

The new individuals which are born or hatched from the eggs continue to grow till they become adults. In some animals, the young ones may look very different from the adults. Recall the life cycle of the silkworm (egg → larva or caterpillar → pupa → adult) Frog is another such example.

Life of Frog

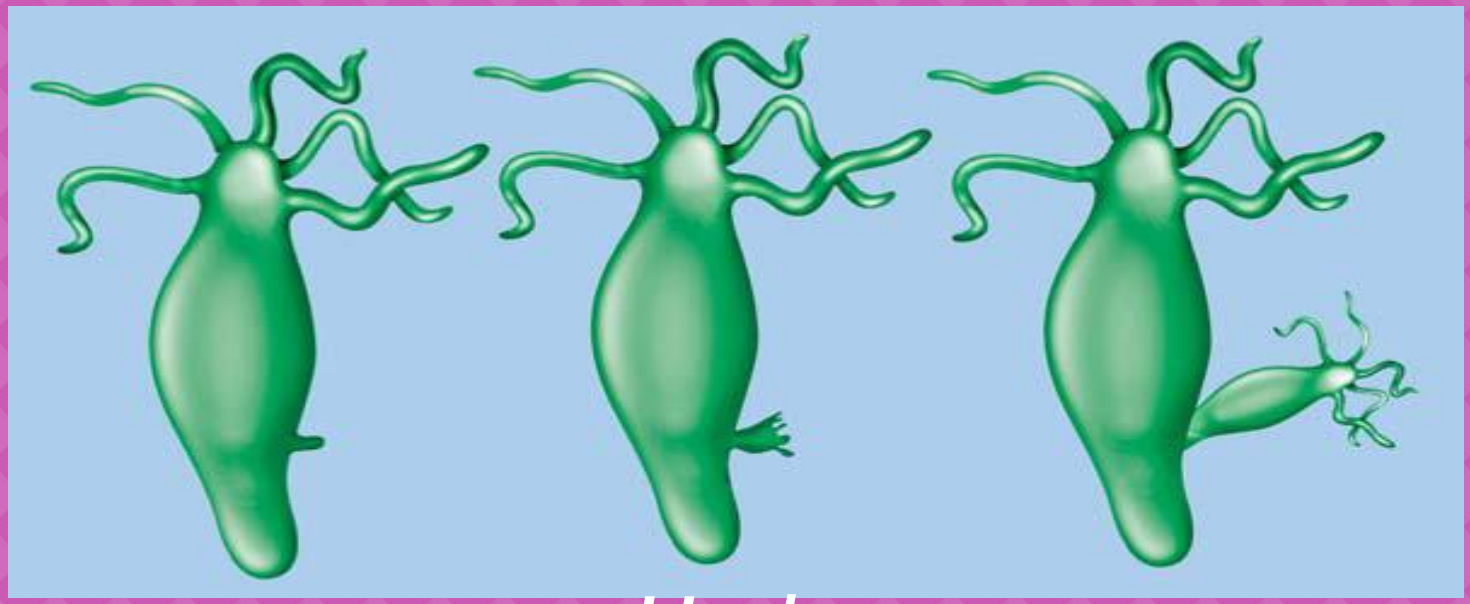
The different stages of frog starting from the egg to the adult stage. We find that there are three distinct stages, that is, **egg → tadpole (larva) → Adult**

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



Life cycle of frog

Asexual Reproduction



Budding in ***Hydra***

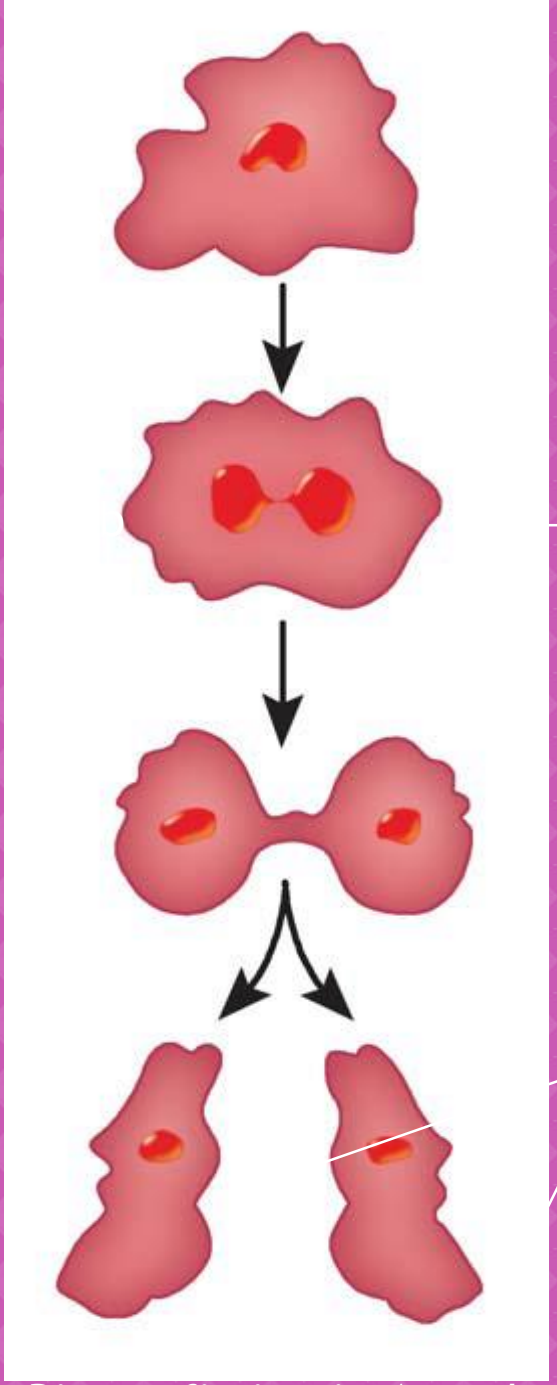
In each hydra, there may be one or more bulges. These bulges are the developing new individuals and they are called **buds**.

In hydra too the new individuals develop as outgrowths from a single parent. This type of reproduction in which only a single parent is involved is called

Asexual reproduction

New individuals develop from the buds in hydra, this type of asexual reproduction is called **budding.**

This type of asexual reproduction in which an animal reproduces by dividing into two individuals is called **Binary fission.**



Binary fission in Amoeba

Story of Dolly, the Clone

Cloning is the production of an exact copy of a cell, any other living part, or a complete organism. Cloning of an animal was successfully performed for the first time by Ian Wilmot and his colleagues at the Roslin Institute in Edinburgh, Scotland. They cloned successfully a sheep named Dolly . Dolly was born on 5th July 1996 and was the first mammal to be cloned.

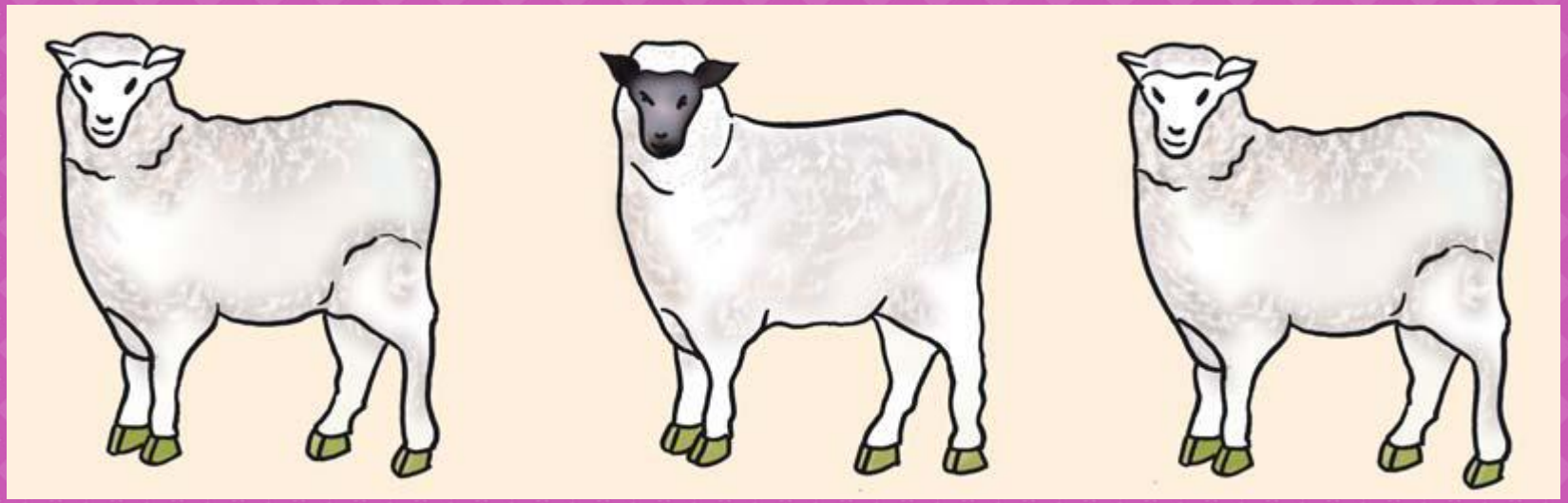
(a) Finn Dorsett sheep (b) Scottish blackface ewe (c) Dolly

During the process of cloning Dolly, a cell was collected from the mammary gland of a female Finn Dorsett sheep [Fig. 9.13 (a)]. Simultaneously, an egg was obtained from a Scottish blackface ewe [Fig. 9.13 (b)]. The nucleus was removed from the egg.

Then, the nucleus of the mammary gland cell from the Finn Dorsett sheep was inserted into the egg of the Scottish blackface ewe whose nucleus had been removed. The egg thus produced was implanted into the Scottish blackface ewe.

Development of this egg followed normally and finally Dolly was born. Though Dolly was given birth by the Scottish blackface ewe, it was found to be absolutely identical to the Finn Dorsett sheep from which the nucleus was taken. Since the nucleus from the egg of the Scottish blackface ewe was removed, Dolly did not show any character of the Scottish blackface ewe. Dolly was a healthy clone of the Finn Dorsett sheep and produced several offspring of her own through

Normal
sexual means. Unfortunately, Dolly died on 14th February 2003 due to a certain lung disease.
Since Dolly, several attempts have been made to produce cloned mammals. However, many die before birth or die soon after birth. The cloned animals are many –a -time found to be born with severe abnormalities



(a) Finn Dorsett sheep *b) Scottish blackface ewe* *(c) Dolly*

We Have learn from these Presentation

There are two modes by which animals reproduce. These are: (i) Sexual reproduction,
and (ii) Asexual reproduction.

Reproduction resulting from the fusion of male
and female gametes is called sexual reproduction.

The reproductive organs in the female include
ovaries, oviducts and uterus.

The reproductive organs in male include testes, sperm ducts and penis.

The ovary produces female gametes called ova
and the testes produce male gametes called
sperms.

The fusion of ovum and sperm is called fertilization. The fertilized egg is called a zygote.

Fertilization that takes place inside the female
body is called internal fertilization. This is observed in human beings and other animals such as hens, cows and dogs.

Fertilization that takes place outside the female
body is called external fertilization. This is observed in frogs, fish, starfish, etc.

The zygote divides repeatedly to give rise to an
embryo.

The embryo gets embedded in the wall of the
uterus for further development.

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

Animals such as human beings, cows and dogs which give birth to young ones are called
viviparous animals.

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

The transformation of the larva into adult through drastic changes is called metamorphosis. The type of reproduction in which only a single parent is involved is called asexual reproduction. **In hydra, new individuals develop from buds.**

This method of asexual reproduction is called budding.

Amoeba reproduces by dividing itself into two individuals.

This type of asexual reproduction is called binary fission.

THE END

Thanks For looking My Presentation