# 7B Summary Sheets

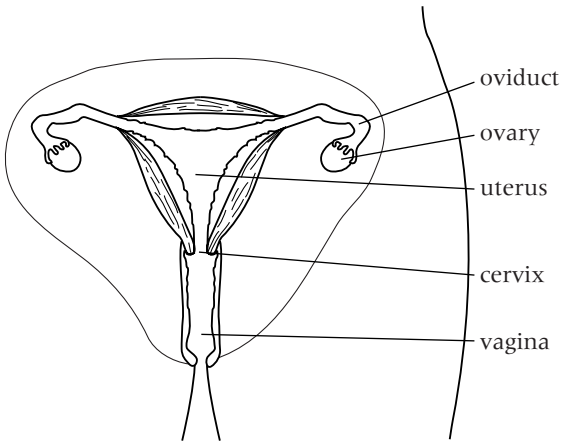
## Reproduction

**Reproduction** produces new living things (**offspring**). In **sexual reproduction** the nucleus in a male **sex cell** joins (**fuses**) with the nucleus in a female sex cell. This is called **fertilisation** and produces a **fertilised egg cell**. When fertilisation happens outside an animal's body it is called **external fertilisation**. Animals that use this method produce a lot of eggs since some will be eaten by other animals. Humans use **internal fertilisation**.

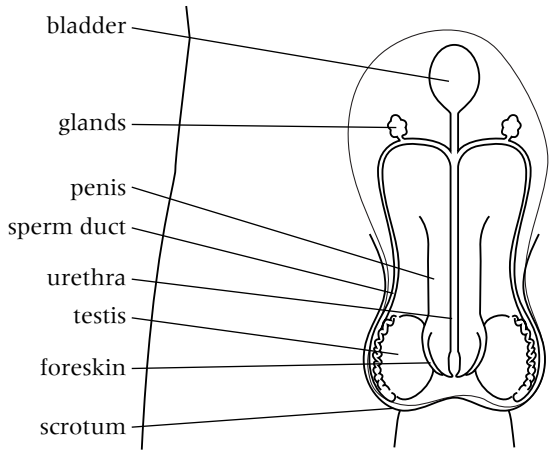
The fertilised egg cell grows into an **embryo** and the embryo eventually becomes a new living thing. Sexual reproduction needs two **parents**. The offspring from sexual reproduction are different from the parents; they are new **varieties**.

### *The human reproductive systems*

Humans have **reproductive organs** so that they can reproduce. The ovaries and testes produce sex cells.




Female – ovaries are where the female sex cells (**egg cells**) are produced.




Male – testes are where the male sex cells (**sperm cells**) are produced.

### *Puberty and adolescence*

The reproductive organs get bigger and start to make sex cells at **puberty**. This is a time when major physical changes occur in our bodies. These changes are caused by **sex hormones**.

**Changes in boys**

- voice deepens ('breaks')
- shoulders get wider
- hair grows under arms, on face and on chest
- pubic hair grows
- testes and penis get bigger
- testes start to make sperm cells
- body smell increases

**Changes in girls**

- underarm hair grows
- breasts develop
- ovaries start to release egg cells
- hips get wider
- pubic hair grows
- body smell increases



**Adolescence** is the time when puberty is occurring and emotional changes happen. It starts between the ages of 10–15 and ends at about 18. The changes start sooner in girls. After puberty, men produce sperm cells for the rest of their lives. Women stop releasing egg cells at the age of 45–55. This is called the **menopause**.

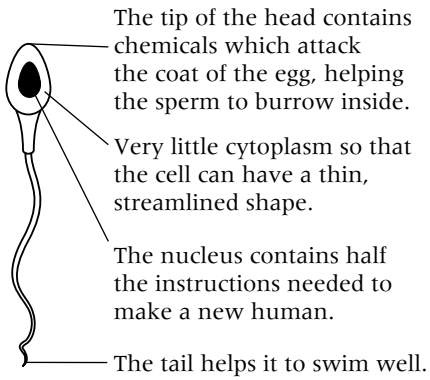
## The menstrual cycle

The **menstrual cycle** starts with **menstruation** (the loss of the uterus lining and some blood through the vagina). It takes 28–32 days for each cycle. About 14 days after menstruation starts, an egg cell is released from an ovary. This is called **ovulation**. If the egg cell is not fertilised, the uterus lining starts to break down and the cycle starts again.

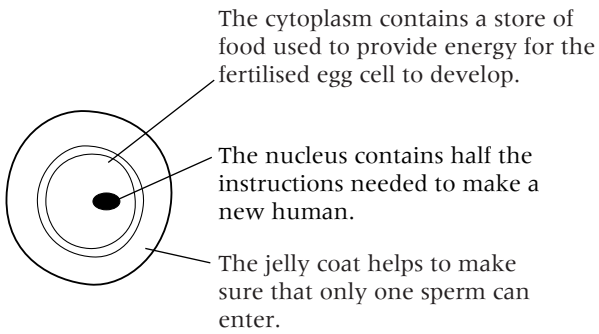
## Sex

The sperm cells enter the **vagina** during **sexual intercourse**. **Semen** (sperm cells mixed with special liquids from the **glands**) is forced out of the penis and into the top of the vagina. This is called **ejaculation**. The semen is moved into the top of the uterus and the sperm cells can swim down the oviducts.

Egg cells and sperm cells are **adapted** to their **functions**.



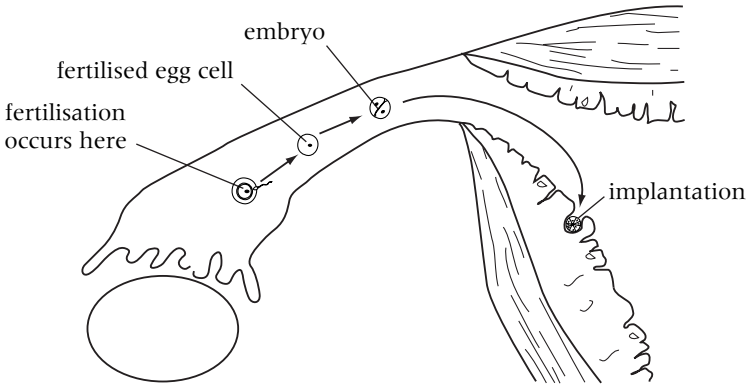

A sperm cell is much smaller than an egg cell.




The egg cell is about the size of a full stop.

## Pregnancy

If the egg cell meets a sperm cell in an oviduct fertilisation can occur. The fertilised egg cell divides to form a ball of cells (an **embryo**). The embryo travels to the uterus where it sinks into the soft lining (**implantation**). The woman is now **pregnant**. Once it has developed all its organs (after about 10 weeks) it is called a **fetus**. It takes about 40 weeks (9 months) for a fertilised egg cell to grow into a baby ready to be born. This time is called the **gestation period**.

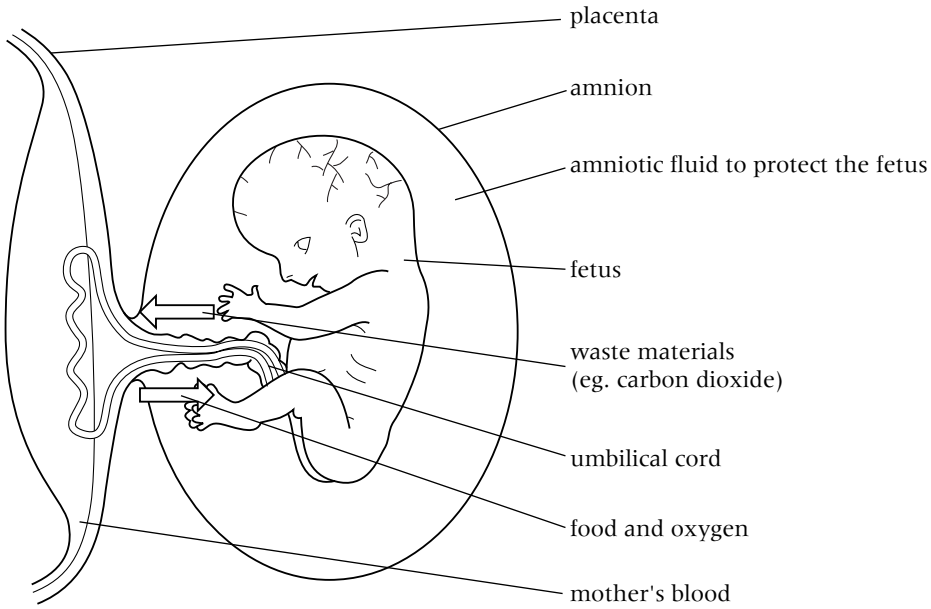




The fertilised egg cells of many animals grow and develop outside their parents. This is called **external development**. Humans use **internal development** and produce less offspring than animals using external development since the growing embryos are protected inside the mother.

While inside the uterus, the fetus is supplied with oxygen and food by the **placenta**. The placenta also gets rid of waste (especially carbon dioxide) from the fetus. The **cord** (or **umbilical cord**) connects the fetus to the placenta.




If a mother smokes, drinks too much alcohol or takes drugs while pregnant she might damage the baby. The baby might be **premature**.

## *Birth*

When the baby is ready to be born, the uterus starts **contractions** and the woman goes into **labour**. The muscles of the cervix relax. The baby is pushed out head first through the cervix and the vagina. After birth, the baby starts to breathe and the cord is cut. The scar left behind is the **navel**. After this the placenta is pushed out of the uterus. This is the **afterbirth**. The baby is fed on milk, often from the mother's breasts which contain **mammary glands** that produce milk. The milk contains **antibodies** which help destroy microbes that might cause a disease in the baby.

