

Human Reproduction

Human reproduction

Adolescence

The time during which you change from being a child to being an adult is called **adolescence**. The physical changes that happen between the ages of 9–14 are called **puberty**.

Girls

These changes include:

breasts develop, ovaries start to release egg cells, periods start, hips widen,

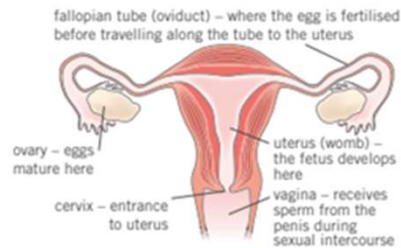
Boys

voice breaks, sexual organs develop, testes start to produce sperm, shoulders widen, hair grows on face and chest

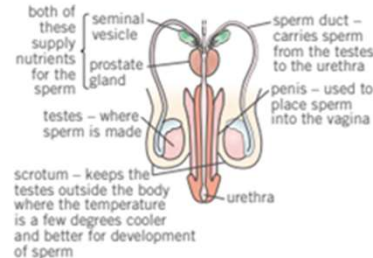
pubic and underarm hair grows, body odour develops, emotional changes, growth spurt

Reproductive systems

female



male



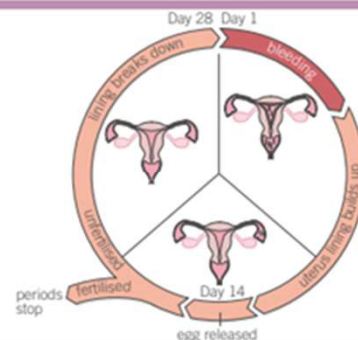
The menstrual cycle

Day 1 – blood from uterus lining leaves the body through the vagina.

Day 5 – bleeding stops. Uterus lining begins to re-grow.

Day 14 – an egg cell is released from one of the ovaries (**ovulation**).

The egg cell travels through the oviduct towards the uterus.



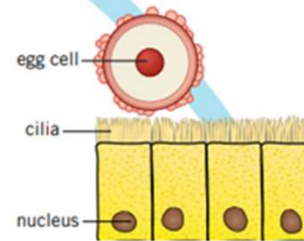
Methods of contraception

Condoms – A thin layer of latex rubber that prevents semen being released into the vagina.

Contraceptive pill – a daily tablet that contains hormones. It prevents pregnancy by stopping ovulation.

Fertilisation

An egg is released every month.



The egg cell is moved along the oviduct towards the uterus by **cilia**.

Sperm cells are produced in the **testicles/testes**.

Sperm are mixed with nutrients and fluid from the glands to form **semen**.

During sexual intercourse a man will release semen into the vagina (**ejaculation**).

If a sperm meets the egg **fertilisation** may happen.

The fertilised egg may then **implant** in the uterus lining and form an **embryo** (ball of cells)

the main steps in a baby's development (**gestation**) during pregnancy

just a dot	1 week – cells beginning to specialise
3 mm long	4 weeks – spine and brain forming, heart beating
3 cm long	9 weeks – tiny movements, lips and cheeks sense touch, eyes and ears forming
7 cm long	12 weeks – fetus uses its muscles to kick, suck, swallow, and practise breathing

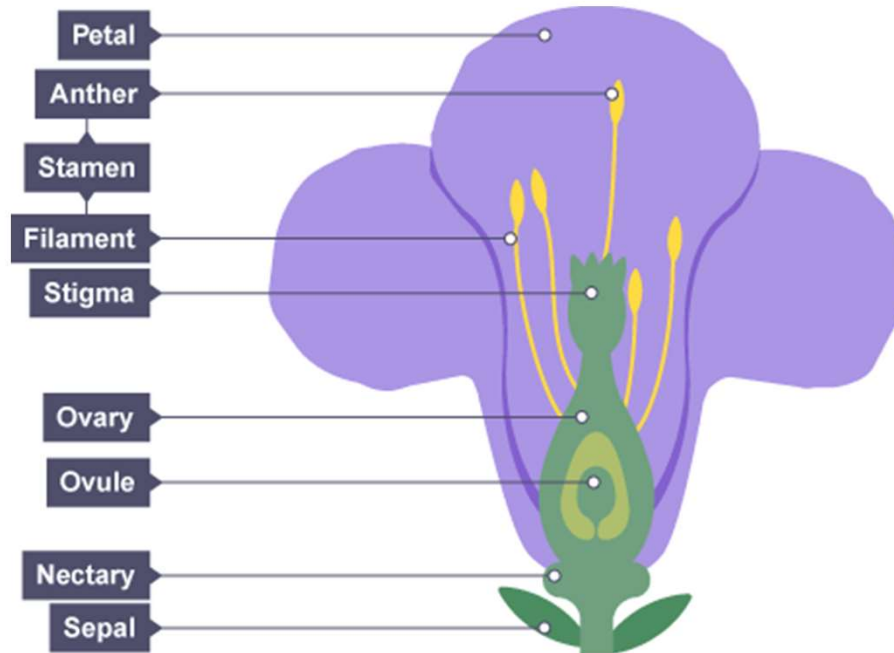
There are three important structures in the uterus during gestation:

placenta – where substances pass from mother to **fetus**

umbilical cord – connects the fetus to the placenta

fluid sac – shock absorber that protects the baby.

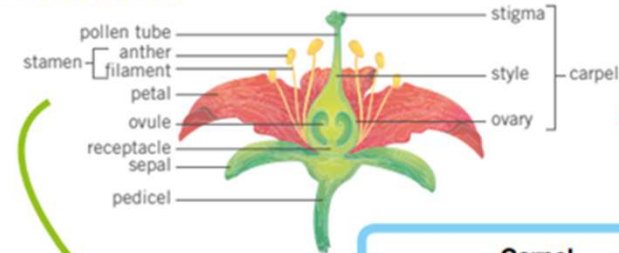
Plant Reproduction



Dispersal method	Description	Example
Animal (exterior)	Some plants use hooks on their fruits. These attach themselves to the fur of mammals or feathers of birds and get carried from one place to another.	Cocklebur, goose grass, burdock
Animal (interior)	Fleshy fruits are eaten by animals. The seeds are then dispersed after passing through the digestive system of animals that have eaten the fleshy fruits.	Tomato, raspberry, grape
Animal (burial)	Hard nuts are usually destroyed if chewed or eaten. However, animals such as squirrels may store them to eat later and forget to go back to get them, giving them a chance to germinate.	Acorns
Explosion/self-propelled	Have a pod that bursts open when ripe, throwing the seeds away	Pea pod
Wind	Some plants have seeds that act as parachutes, which are carried away by the wind	Dandelions
Wind (spinning)	Some seeds are winged. They spin like helicopters as they fall from the tree, providing a longer time for dispersal by wind.	Maple fruits, sycamore
Water	Some plants grow near rivers, lakes, streams or oceans. Their fruits or seeds fall from the plant and are carried away by the water.	Coconut, silver birch, willow

Plant reproduction

Parts of a flower



Stamen

- male** part of the flower
- the **anther** produces pollen
 - the **filament** holds up the anther

Carpel

- female** part of the flower
- the **stigma** is sticky to catch grains of pollen
 - the **style** holds up the stigma
 - the ovary contains **ovules**

Pollination

Pollination is the fertilisation of the ovule, which occurs when pollen is transferred from an anther to the stigma. Pollination can occur due to insects or the wind.

cross-pollination

between two **different** plants

self-pollination

between the male and female parts of the **same** plant

Fertilisation



The tube grows out of the pollen grain and down through the style.

The pollen nucleus moves down the tube.

The pollen nucleus joins with the ovule nucleus. Fertilisation takes place and a seed will form.

Germination

When a seed starts to grow it is called **germination**.

To germinate, seeds need:

- water – for the seed to swell and the embryo to start growing
- oxygen – for respiration and transferring energy for germination
- warmth – to help speed up the reactions in the plant.