

Chapter 3: Reproduction

Knowledge organiser



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

pubic

puberty.

These changes include:

Girls

breasts develop, and underarm ovaries start to hair grows, body release egg cells, odour develops, periods start. emotional hips widen, changes, growth spurt

Boys

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

to the urethra

penis - used to

into the vagina

Reproductive systems

female fallopian tube (oviduct) – where the egg is fertilised before travelling along the tube to the uterus ovary - eggs

male these vesicle for the gland sperm is made testes outside the body where the temperature is a few degrees cooler and better for development

sperm from the

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.

egg released

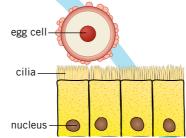
Methods of contraception

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)



iust a dot

3 mm long

3 cm long

7 cm long

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

pregnancy

1 week - cells beginning to specialise

> 4 weeks – spine and brain forming, heart beating

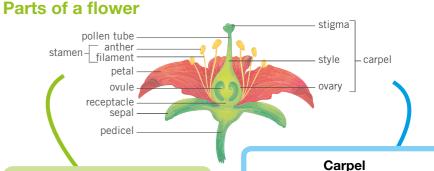
9 weeks – tiny movements, lips and cheeks sense touch, eyes and ears forming

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



Stamen

male part of the flower

- the **anther** produces pollen
- the **filament** holds up the anther

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.



Make sure you can write definitions for these key terms.

adolescence anther contraception fertilisation carpel cervix cilia eiaculation embrvo fetus filament aestation aermination implant menstrual cycle oviduct ovulation pollen pollination puberty semen sperm duct stamen stigma style umbilical cord uterus urethra ovule placenta testes