science

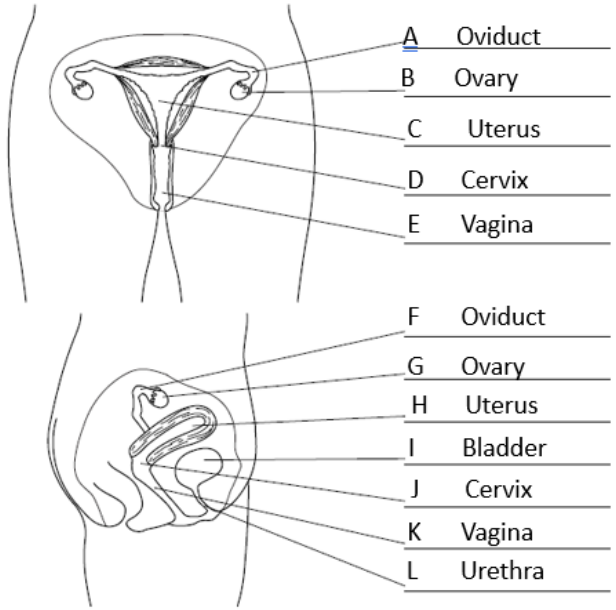
biology

Y7 Genes 1 – Human reproduction

1) Types of reproduction

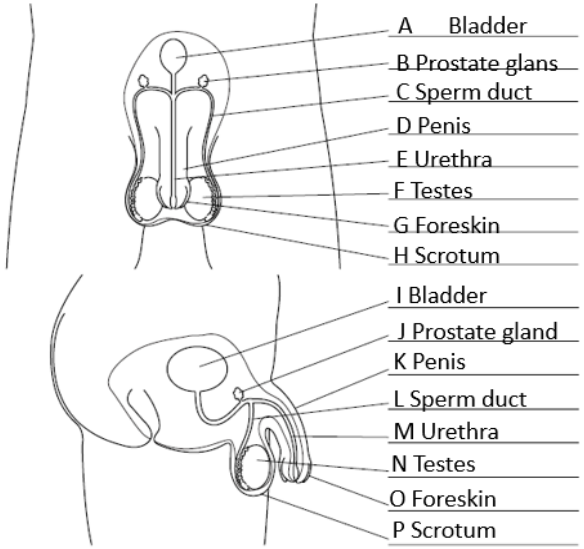
Type of reproduction	Examples	Avantages	Disadvantages
Asexual	Greenfly	Rapid / fast	Vulnerable to diseases and environmental changes
Sexual: Internal fertilisation	Giraffe	Fewer eggs and sperm need to be made	A mate has to be found and mated with.
Sexual: external fertilisation	Frog	Increase chance of variation as the sperms from one male will fertilise the eggs of many females.	Many sperm and eggs need to be made as many sperm will never meet and egg and many eggs will get eaten.

2) Female reproductive system



Oviduct – move the egg from the ovary to the uterus
Ovary – produce an egg (female gamete)
Cervix – separate the vagina from the uterus
Uterus – receive the fertilised egg and grow the foetus

3) Male reproductive system



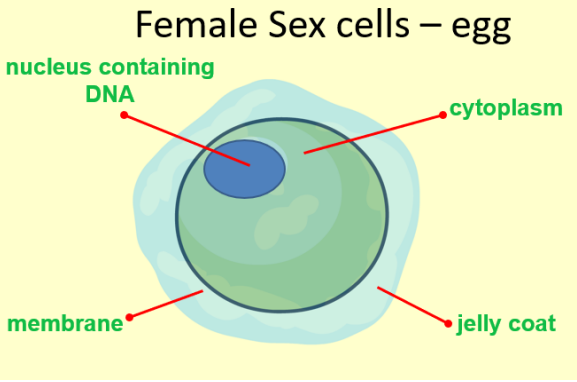
Prostate glands – add a fluid to the sperm that will keep it nourished and at the correct pH to survive the acidic environment of the vagina
Testes – Makes sperm.
Scrotum – Hold the testes outside of the body so they are cooler, which helps the production of sperm.
Sperm duct – Carry the sperm form the testes to the end of the penis.

4) Fertilisation

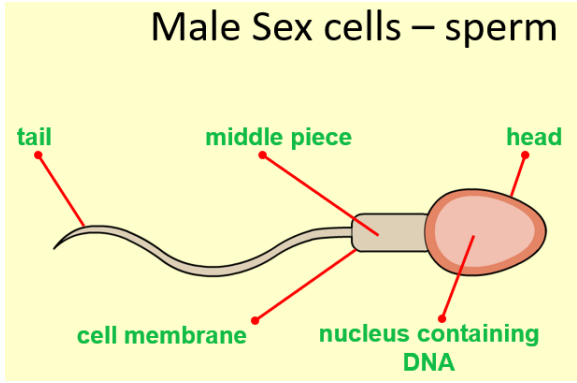
Fertilisation is when a sperm joins with an egg and each of their 23 chromosomes meet to make the 46 needed to build a new individual.

During sexual intercourse the sperm is released into the top of vagina and swims through the cervix and uterus to the egg. Fertilisation occurs in the oviduct

5) Gametes



Nucleus has 23 chromosomes (half the number needed for a fertilised egg).
Membrane – control what can enter and leave the cell.
Cytoplasm – Chemical reactions happen under the control of enzymes.
Jelly coat – Prevents more than one sperm entering the egg.



Tail – Allows the sperm to swim to join with the egg.
Middle piece – Contains mitochondria to supply the energy to move the tail.
Nucleus – Contains 23 chromosomes (half the number need for a fertilised egg).
Membrane – control what can enter and leave the cell.

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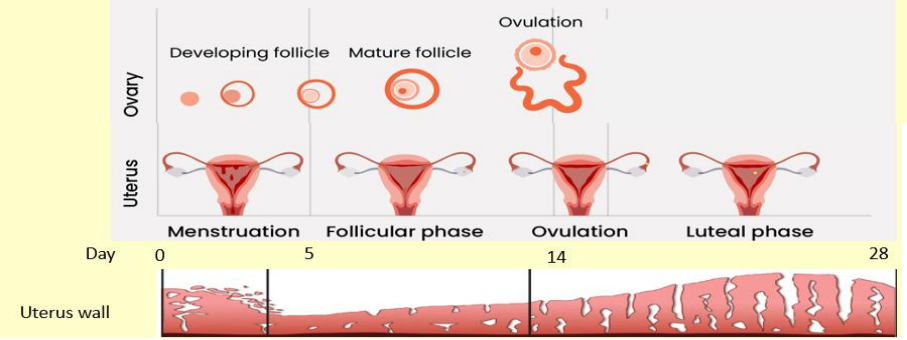
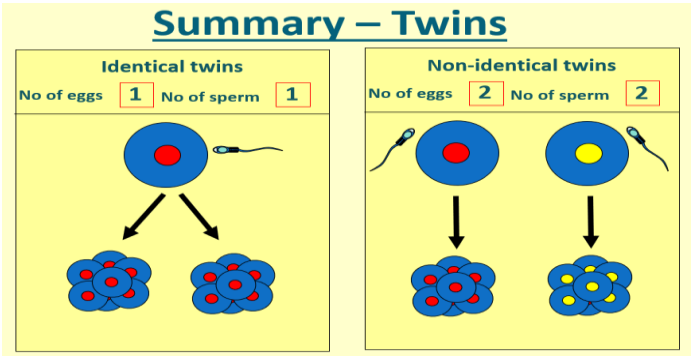
6) Menstrual cycle



Day 1- 5 – Wall of the uterus comes away and is lost through the vagina as menstrual flow of blood.
Day 6-14 – Egg starts to mature in the ovary.
Day 14 – Ovulation – the egg leaves the ovary into the oviduct.
Day 14- 28 – Egg moves along the oviduct and if it is not fertilised it enters the uterus and menstruation starts to happen again.

7) Fertility

IVF – Invitro fertilisation – Egg and sperm are collected and fertilisation happens in the laboratory. The fertilised egg is then implanted into the uterus of the potential mother. Twins and triplets are common because more than one fertilised egg is often implanted

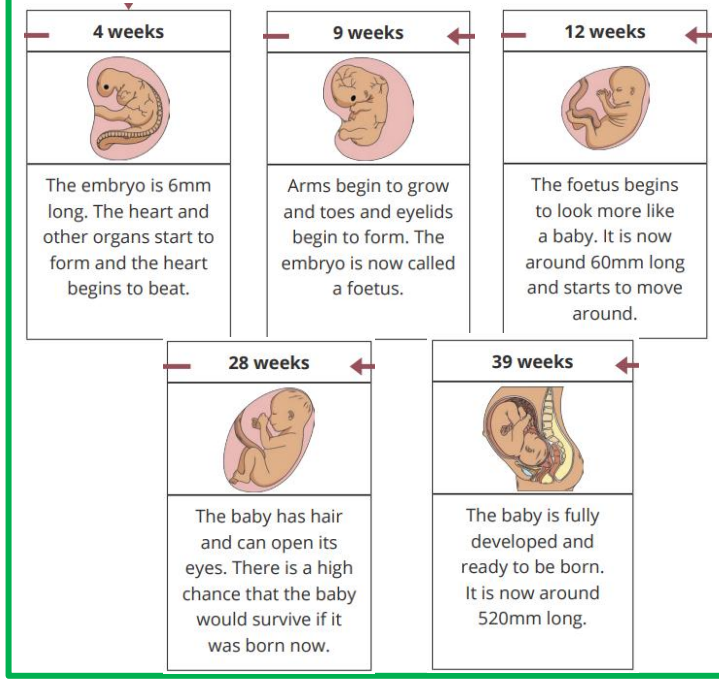


8) Pregnancy

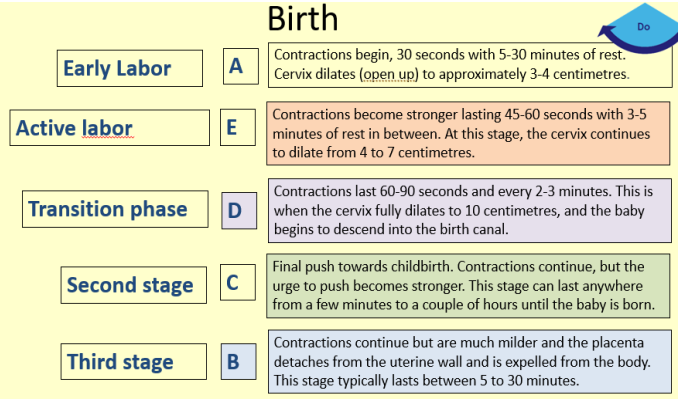
Pregnancy is counted in weeks (40 weeks). A pregnancy is counted from the first day of a woman's last period. This could be two weeks before sex and conception. A nurse or doctor then counts on 40 weeks to calculate the due date.

A growing baby needs theses to survive and grow.
- Warmth from being inside the uterus.
- Oxygen, food, from mum's blood through the placenta.
- Excrete waste and carbon dioxide into mum's blood through the placenta
- Protection from being surrounded by the amniotic fluid.

Stages pregnancy



9) Birth and post-natal care



Premature birth

Defined as babies born before 37 weeks.
Often these babies are
- low birth weight.
- underdeveloped lungs.
- underdeveloped digestive systems

They are placed in incubators and given specialist treatment such as drips and kept at a stable temperature.

Post-natal care

What must a parent or carer provide?
- Appropriate food – bottle or breast milk (breast milk contains antibodies.
- Warmth
- Safe place
- Interaction for neurological development
- Hygiene to avoid overloading immune system

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