

Year 7 Biology Reproduction in Animals: Knowledge Organiser

What is Sexual Reproduction?

Sexual reproduction is a form of reproduction where **two gametes fuse together**. Each gamete contains half the number of chromosomes of normal cells.

Why is sexual reproduction important?

It leads to **variation in the offspring**, so each one is unique.

It means the **species** of animal is then more likely to **survive** and not become extinct.

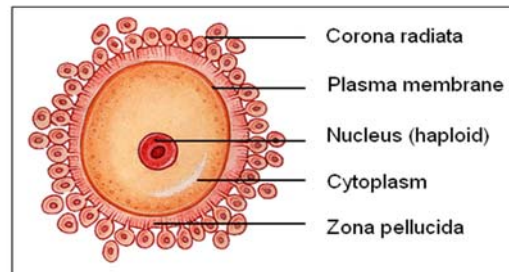
What is gestation time?

This is the **length of time from the time of conception until the birth**. Different mammals have different gestation times. Bigger mammals tend to have longer gestation periods than smaller mammals.

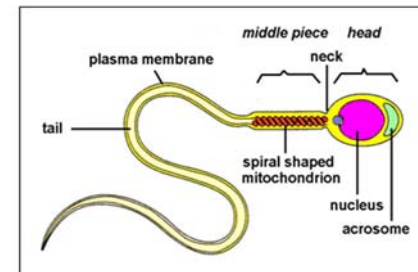


What are Gametes?

These are the specialised cells that fuse together at fertilisation. In animals they are called Sperm in males and Ova (eggs) Ovum (egg) in females.



EGG



SPERM

Gamete	Organelle	Function
Ovum, Sperm	Nucleus	Controls the activities of the cell, contains genetic material (DNA) in the form of chromosomes.
Ovum, Sperm	Plasma Membrane	Controls entry and exit of substances into and out of the cell
Ovum, Sperm	Cytoplasm	Jellylike fluid where chemical reactions take place.
Ovum	Mitochondria	Site of respiration – releases energy from glucose.
Sperm	Tail (Flagellum)	Allows the cell to move to the ovum.
Sperm	Acrosome	Contains chemicals that are used to help the sperm break through the Zona Pellucida and the plasma membrane of the Ovum.

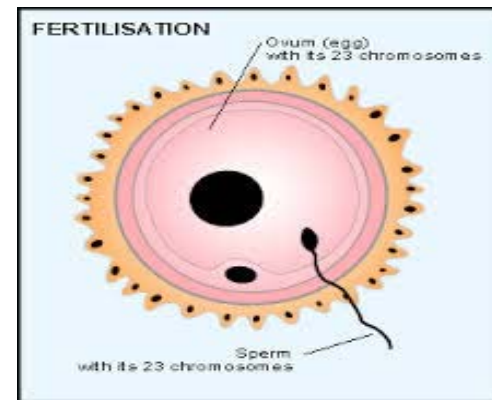
		Father's Genes	
		b	b
Mother's Genes	B	Bb	Bb
	b	bb	bb

Punnet Square diagrams are used to predict the characteristics offspring might have.

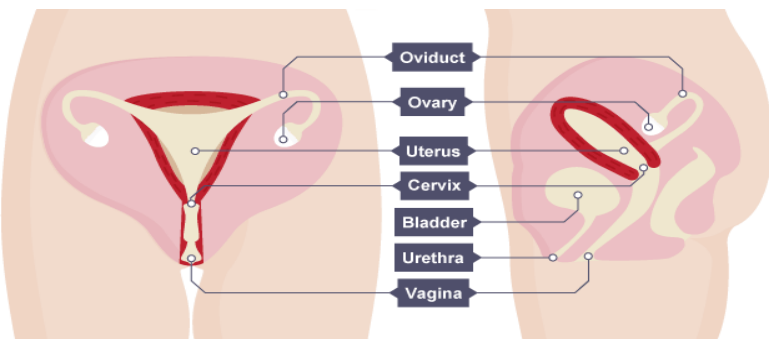
This example shows there is a 50% (1:1) of having offspring with Brown eyes and 50% (1:1) of having offspring with blue eyes.

Gender **can be predicted too**. Females have **XX chromosomes** and Males have **XY chromosomes**.

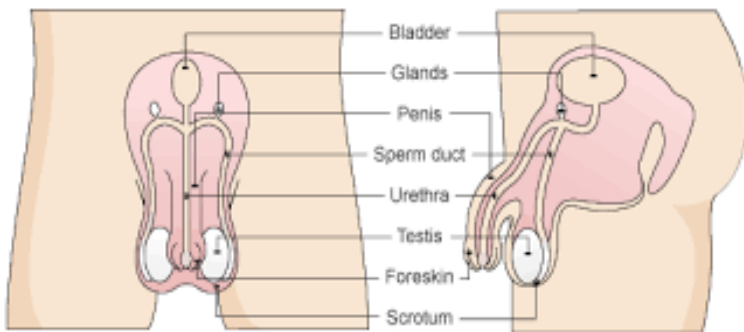
Fertilisation is the joining of the male and female **gametes**. It creates a fertilised ovum known as a **Zygote**.



The Female Reproductive System

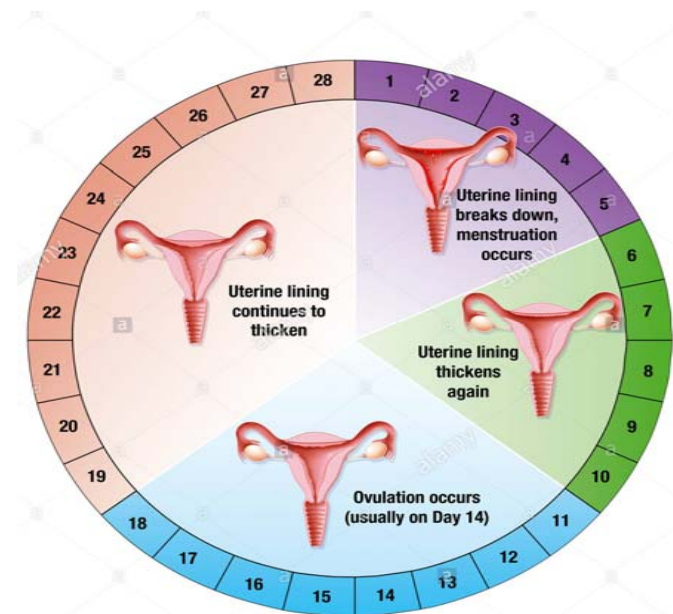


The Male Reproductive System



Puberty is the time when a child's **body changes** into that of an adult and becomes **capable of sexual reproduction**.

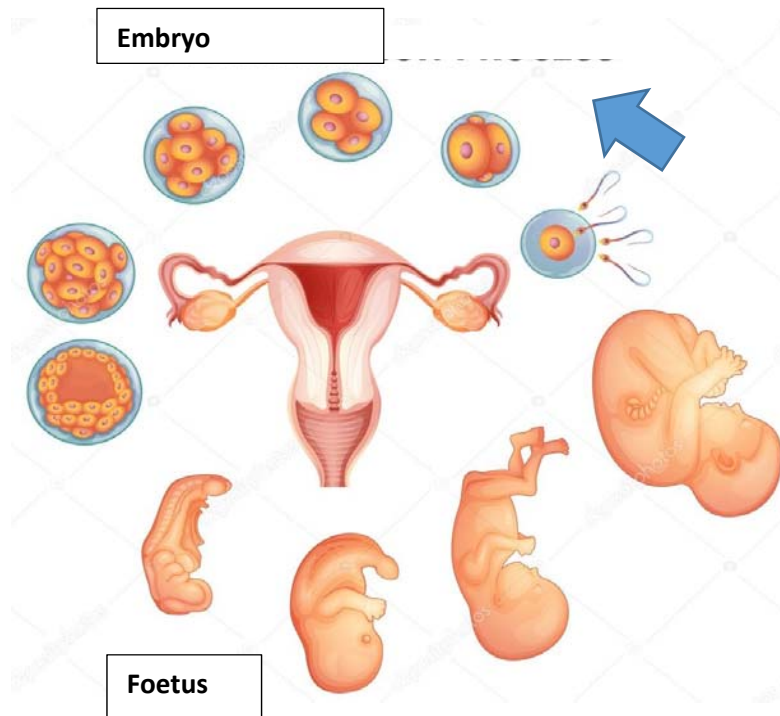
During this time females start their **Menstrual Cycle**.



What happens after fertilisation that leads to the development of a multicellular organism?

The **zygote** (one fertilised cell) **divides into two identical cells**, that **each in turn divide into two more**. This process of **cell division** is repeated. **Most** of these **cells become specialised cells**, which in turn work together as **tissues**. These work together as **organs**. Many organs work together as **organ systems**, to carry out the **7 life processes in an organism**.

This all happens during the **gestation period** and in Humans it takes 9 months. (From fertilisation to birth!)



Keeping the foetus healthy

Do's	Don't's
Have regular health check ups	Smoke
Eat a balanced diet	Drink alcohol
Do regular exercise	Take drugs

Can reproduction be controlled?

Contraception can be used to prevent pregnancy. Some of these prevent the Sperm and Ovum coming into contact with each other. One example is a condom. Other contraceptives contain female sex hormones that work by affecting the menstrual cycle and the release of an ovum.

A female is more likely to get pregnant around the time that the ovum is being released from the ovary.

Sometimes **fertility treatments** are needed to **increase the chances of fertilisation and pregnancy**.

