

# Knowledge Organiser - Year 5 - Science: Animals

## including humans; Human Lifecycle



A Life cycle is the series of changes in the life of an organism including reproduction.

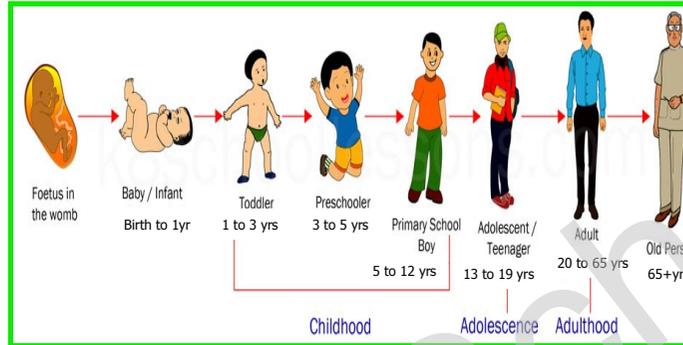
### Key Vocabulary

<b>Adolescent</b>	The process of developing from a child into an adult (teenager).
<b>Adult</b>	A person who is fully grown or developed.
<b>Child</b>	A young human being (infant) below the age of puberty.
<b>Embryo</b>	An unborn offspring in the process of development, during the second to the eighth week after fertilization.
<b>Fertilisation</b>	This is the fusion of the nucleus of a male reproductive cell with the nucleus of a female reproductive cell, producing a new cell called a zygote.
<b>Foetus/ fetus</b>	An unborn offspring of a mammal, in particular an unborn human more than eight weeks after conception.
<b>Gamete</b>	This is the male or female reproductive cell that contains half the genetic material of the organism.
<b>Gestation</b>	The process or period of time for developing inside the womb, between conception and birth.
<b>Life expectancy</b>	The average period that you may expect to live.
<b>Mammals</b>	A warm-blooded vertebrate animal, that has hair or fur, females secrete milk for young and typically giving birth to live young.
<b>Offspring</b>	The young of an animal or a person's child or children.
<b>Ovum</b>	Plural: Ova. This is the mature female reproductive cell and is released by the ovaries. It can divide to give rise to an embryo usually only after fertilization by a male cell.
<b>Puberty</b>	This is the process of physical changes through which a child's body matures into an adult body capable of sexual reproduction.
<b>Reproduction</b>	This is the biological process by which new offspring are produced from their parents.
<b>Sexual reproduction</b>	When an Offspring inherits genes from both mother and father, inheriting a mix of features from both.
<b>Sperm</b>	This is the mature male reproductive cell. It fertilizes the female cell to make the zygote.

### Working Scientifically

Explore ideas and raise different kinds of questions; They should use information records to identify, classify and describe living things, and identify patterns that might be found in the natural environment. They should decide how to record data from a choice of familiar approaches; recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. They should use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time.

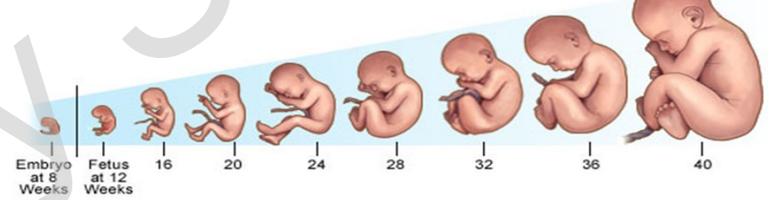
## Key Question: What happens as we get older?



The Human Lifecycle starts with the two cells that hold the genetic information to make a baby. The male cell (sperm) and the female cell (Ovum) must meet and join (fertilize) in order for the process to begin. A fertilized egg is called a zygote and it must stay inside the female's womb for 40 weeks to grow. Before 9 weeks these developing cells are called an embryo. At nine weeks we now call the embryo, a foetus. It will not be called a baby until it is born. From birth, there are still several more stages of childhood before adolescence, then adulthood and finally old age. Your adult phase is by far the longest.

Starting from just two cells that fuse to join two sets of genetic information together, it is amazing that a new life is formed with some of each of its parents' traits. You might share the same eye colour, hair colour or nose shape!

### Fetal Growth From 8 to 40 Weeks



### Length of Pregnancy in some Mammals

Animal	Gestation Period (days)	Animal	Gestation Period (days)
Camel	406	Hyena	110
Cat	62	Kangaroo	40
Cow	280	Lion	108
Chimpanzee	237	Mink	50
Dog	62	Monkey, rhesus	164
Dolphin	276	Mouse	21
Elephant, African	640	Opposum	13
Ferret	42	Orangutan	245-275
Fox	52	Pig	113
Giraffe	395-425	Rabbit	32
Goat	151	Rat	21
Guinea pig	68	Reindeer	215-245
Hamster	16	Seal, northern fur	350
Hedgehog	35-40	Sheep	148
Horse	337	Skunk	62
Human	266	Squirrel, grey	44

**Face**  
You may get pimples.

**Sweat**  
Your armpits sweat.

**Menstruation**  
Your period begins.

**Puberty: What Happens?**

**Height**  
You get taller.

**Breasts**  
Your breasts grow.

**Hair**  
Hair grows in your armpits, on your legs, and between your legs.

**Height**  
You get taller.

**Face**  
You may get pimples.

**Privates**  
Your penis and testicles get bigger.

**Puberty: What Happens?**

**Voice**  
Your voice deepens.

**Sweat**  
Your armpits sweat.

**Hair**  
Hair grows on your face, arms, legs, chest, armpits, and between your legs.



This is a fertilised Zygote, getting ready to divide into an embryo. This cell begins to divide into a solid ball of cells. Then, it becomes a hollow ball of cells called a blastocyst, attaching to the lining of the mother's uterus to stay protected.

In order to become an adult, children need to go through the process of puberty. This is a time of hormonal and physical change to prepare the body to be able to reproduce. The diagrams above list the physical changes that happen which are different for boys and girls with different hormones (chemicals in the body) causing the changes. For boys, this hormone is testosterone and in girls there are two hormones: oestrogen and progesterone.