



Wellington Primary Science

Parental Information

Year Group – 5

Term – Autumn

Topic – Human Reproduction and Ageing

In the Human Reproduction and Ageing project, your child will learn what life cycles are, order the stages of life cycles for different animal species and compare them. They will learn what mammals are and the five key mammalian characteristics. They will sort vertebrates, deciding whether or not they are mammals. They will look closely at different mammalian life cycles and make comparisons. They will investigate the relationship between the mass of mammals and how long they carry their young by creating and interpreting scatter graphs. They will learn about the stages and processes of the human life cycle. They will learn about human gestation from embryo to birth. They will investigate how humans change and develop from infant to adolescence in the juvenile stage. They will learn about the changes that happen during puberty. They will interpret data about human growth and learn about the human reproductive systems, (Our Sex and Relationships Education (SRE) is separate to this topic – this element of science learning is compulsory for Year 5 children and focuses only on the reproductive systems in males and females – more information regarding our SRE learning will follow in the Spring term). They will learn about how humans change as they get older. They will investigate how ageing affects reaction times.

Your child will receive a copy of the knowledge organiser below to aid their learning. Please take time to look through this at home with your child.

Your child will be bringing home a ‘Home Learning’ guide and workbook, in which they can record home learning tasks for this topic. Included is a further reading suggestion list and some suitable child friendly websites, which can be used to deepen their understanding of the topics that they will be covering in class.

Class teachers will guide your child on activities which will directly support that week’s learning and any homework expectations – there is no requirement for the children to complete all of the tasks in the pack.

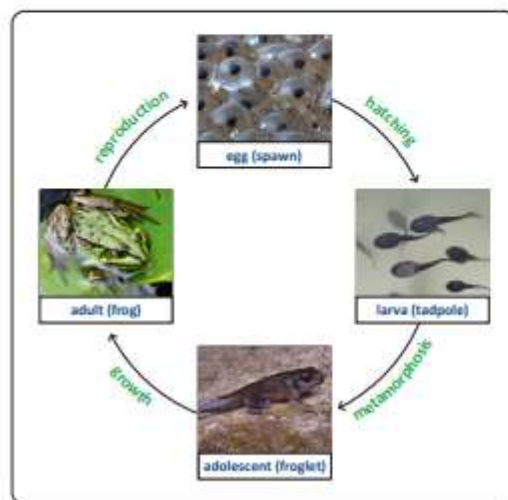
Should you have any questions please don’t hesitate to contact the Year Group Team.

Human Reproduction and Ageing

Reproduction is the process of producing offspring, which is vital for the survival of all plant and animal species. All living things go through a series of changes during their life cycle, where they grow, mature, reproduce and age. As living things age, they gradually decline and then die.

Life cycles

A life cycle is a series of changes that happen to a living thing during its lifespan. The events happen in a set order as the animal or plant grows and develops. A life cycle is presented on a circular diagram to show the main developmental **stages** of a plant or animal's life and the **processes** between these stages. All living things eventually die, but reproduction starts the life cycle again.



Life cycle of the common frog.

Mammals

Mammals are a group of vertebrate animals, which means they have a backbone. Mammals have several characteristics that make them different from other vertebrates. These include:

- producing milk to feed their young
- being warm blooded
- giving birth to live young
- having fur or hair
- breathing air with lungs



brown bear



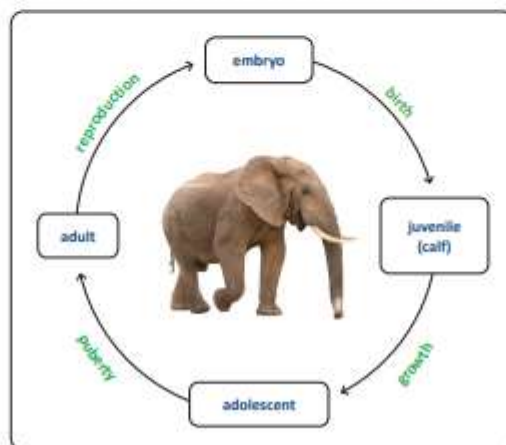
Bengal tiger



human

Mammalian life cycle

There are four stages and four processes in the mammalian life cycle.



The length of each stage varies for different animals. For example, the European hamster has a 2–3 week juvenile stage, but the same stage is 10 years for an African elephant.

Human life cycle

The human life cycle has the same stages and processes as other mammalian life cycles.

Embryo

The embryo stage takes around 40 weeks. This is called the gestation period.



Juvenile

During the juvenile stage, the child grows and develops rapidly until around 12 years old.



Adolescent

The adolescent stage ends at around 19 years old. The process of puberty enables an adolescent to develop into an adult and be able to reproduce.



Adult

A person is a fully developed adult at around 20 years old and may choose to reproduce, which starts a new human life cycle.



Human gestation timeline

4 weeks

At four weeks after fertilisation, the embryo has developed into the size of a poppy seed.



16 weeks

At 16 weeks, the embryo has developed into a foetus the size of an avocado. Its nervous system and skeleton have become stronger.



32 weeks

At 32 weeks, the foetus is about the size of a coconut. It moves and sucks its thumb.



39 weeks

At 39 weeks, the foetus is the size of a small pumpkin. Its lungs are fully formed, ready for birth.



Birth

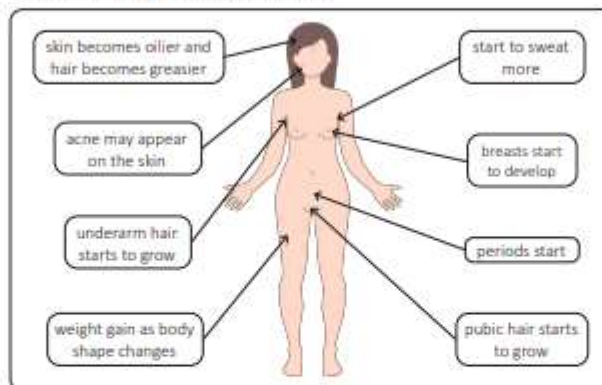
When the baby is born, it cries, takes its first breath and its umbilical cord is cut.



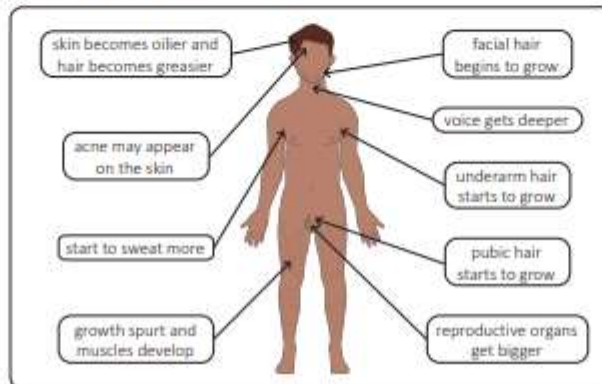
Puberty

Puberty is when a child's body changes as they develop into an adult and become able to reproduce. Puberty can start at any time between the ages of 8 and 14 and takes around four years. Chemicals called hormones cause puberty to begin and create physical changes, such as developing acne, sweating more and growing underarm and pubic hair. Puberty also creates emotional changes, including mood swings, low self-esteem, aggression and depression.

Physical changes during puberty in females

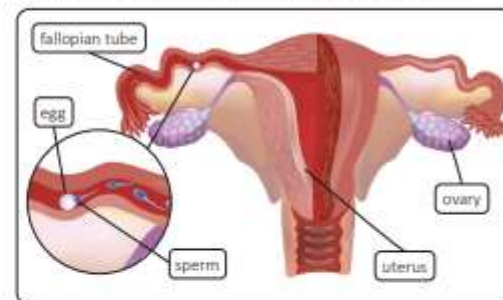


Physical changes during puberty in males



Human sexual reproduction

Sexual reproduction is the process of reproduction that involves one female and one male. When humans reproduce, a male sperm fertilises a female egg that has been released from the ovary into the fallopian tube. The fertilised egg divides as it travels down the fallopian tube and becomes a ball of cells called a blastocyst. The blastocyst implants in the wall of the uterus and develops into an embryo.



A sperm fertilises an egg in the female reproductive system.

Human ageing

Humans reach the peak of their physical fitness during the first decade of adulthood. After this, the cells that make up the human body begin to decay. They lose the ability to function correctly, causing various ageing effects, including cataracts, loss of hearing, greying hair, deterioration of organs and muscles, age spots and wrinkles.

Glossary

cataract	A condition in which the lens of the eye becomes cloudy, resulting in loss of vision.
foetus	A stage in the mammalian life cycle when a mammal in the uterus has begun to develop limbs and organs.
gestation	The length of time the young of a mammal develops inside the female's body until birth.
process	A series of changes that happen naturally.