



Year 5 - The Human Body Reading Booklet

Lesson Series:

1. Human Growth Stages.
2. Adolescence and puberty.
3. Slowing down.
4. The Human Reproductive System.
5. The Endocrine System and Glands.

Name: _____

Class: _____

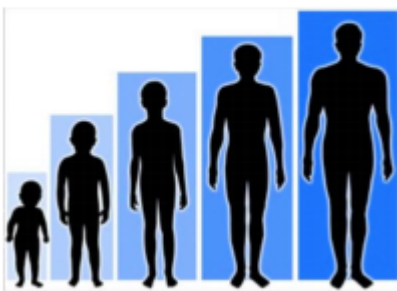
Lesson 1 - Human Growth Stages

Humans show stages in their growth. Humans develop from an embryo into a foetus inside the mother's uterus. When humans are newborn babies, also called infants, they either drink breast milk or are bottle-fed. Infants grow and develop rapidly until around the age of one, when they learn to walk.

Read this

Between the ages of eight and seventeen, most humans experience a period of rapid growth and bodily change as they reach puberty, and they become capable of reproducing. By twenty-one, humans stop growing. At about forty, humans' metabolism begins to slow down and at sixty or later, humans reach old age.

Human Growth Stages



Lesson 2 - Adolescence and puberty

The period of growth and change in the human body that occurs between eight and seventeen is known as adolescence. During adolescence, powerful chemicals called hormones are released into the bloodstream from glands in your body. These hormones cause physical, mental and emotional changes. The process usually begins earlier in females than it does in males.

Read this

As an adolescent, you may experience an increase in your appetite; you may be hungry more often. You may also require more sleep at night. Some people experience a very rapid change in height and weight, sometimes called a 'growth spurt'. Their muscles and bones get larger and their favourite clothes no longer fit. They may feel awkward because their hands and feet are growing faster than other parts of their body.

Females start to develop breasts and their hips begin to round out. Males' shoulders widen and their voices change, sometimes cracking as they begin to deepen. Both males and females grow hair under their arms and around their genitals. These changes are normal, and they happen to every human being, though there is variation in the age at which people begin adolescence.

Changes in Puberty

- Muscles and bones grow larger.
- Females develop breasts and their hips widen.
- Males shoulders widen and their voice deepens.
- Both females and males grow hair under their arms and around their genitals.
- Females start menstruating (periods begin).
- Males produce sperm in testes
- Hormonal changes produce mood swings.

Lesson 3 - Slowing Down

Most humans stop growing at about twenty, and the metabolism slows down at about 40. Women stop being able to reproduce in their forties. Lifespan in the UK is approximately 80 years, slightly longer for women than men. As we age, our skin becomes thinner and less elastic, so wrinkles form. We store less fat under our skin so our bones become more visible. Bones and muscles become weaker and memory can deteriorate. Hair becomes thinner and retains less colour. How to slow down ageing is big business, but scientists have many questions still to be answered about how and why we age.



Useful link: <https://www.funkidslive.com/learn/hallux/heart-beat/blood/#>

Lesson 4 - The Human Reproductive System

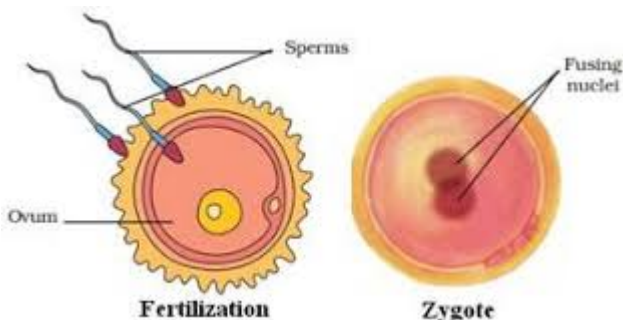
The changes in a person's body during adolescence are in preparation for puberty, the time when male and female humans are able to produce children. Human reproduction is very similar to reproduction in other mammals. In females, an egg is released each month from one or two ovaries. The egg then passes into one of the fallopian tubes, where it could be fertilised by sperm from a male. If it is not fertilised, it passes into the uterus and then out of the body along with the lining of the uterus. The uterus lining and egg pass through the vagina on their way out of the body. This monthly process of shedding the egg and lining of the uterus is called menstruation from the Latin word mensis, meaning 'month'.



Sperm are produced in the testes, egg-shaped glands that are contained in a pouch of skin, the scrotum, which hangs below the penis. The sperm travel through tubes in the testes in a whitish fluid called semen. The semen exits the male's body through the urethra, a tube in his penis. The semen enters the vagina and the sperm swims towards the uterus.

After reaching the uterus, they swim toward the fallopian tubes, where one sperm cell breaks through the egg's outer covering and then fuses with the egg and fertilises it. If the egg is fertilised, it develops into a zygote, which travels down the fallopian tube and implants itself in the wall of the uterus. Once this happens, we say the woman is pregnant.

In the uterus, the zygote grows into an embryo and further develops into a foetus. The foetus grows inside the mother until it is developed enough to live in the outside world. At that point, the baby is born. Once it is born, a baby needs constant care and attention. Human infants needs an adult to take care of them, to feed them and keep them safe.



Lesson 5 - The Endocrine System and Glands

Humans have two different kinds of glands which together make up the endocrine system: duct glands and ductless glands. Duct glands secrete their products outside the body or directly into the digestive system. Sweat, saliva, mammary and sebaceous glands are all duct glands.



When you run around or play sports, your sweat glands secrete perspiration (sweat) outside your body to help keep you cool. Ductless glands (called endocrine glands) also secrete chemicals (called hormones), but they secrete them inside the body directly into the blood. They carry chemical messages to various parts of the body.

The pituitary gland and the adrenal glands are ductless. The pituitary gland is a tiny gland located at the bottom of the brain, near where the brain meets the spinal cord. It is sometimes called the 'master gland', because it secretes hormones that tell the other endocrine glands what to do.

The pituitary also secretes the hormone that makes you grow, as well as hormones that trigger the beginning of puberty. The thyroid gland is located in the front of the neck, just below the larynx, or voice box. It secretes a hormone that controls the rate at which the body burns energy and uses food. The pancreas is located behind the stomach. It is divided into two parts. One part has ducts, while the other is ductless. The part with ducts releases chemicals that help the digestive system break down food.

The ductless part secretes hormones into the blood, including the hormone insulin, which regulates how the body uses sugar. When a person's pancreas does not produce enough insulin, that person has a disease called diabetes. Fortunately, Diabetes can be treated. Some diabetic people give themselves insulin injections to make sure their blood sugar levels don't get too high. The adrenal glands are small glands located above the kidneys.

They give off the hormone called adrenaline that speeds up the heart and allows blood to flow more rapidly to muscles and the brain. If you've ever become scared or angry and felt your breathing and heart rate speed up, you've experienced what people call 'an adrenaline rush'. This is your body's way of getting you prepared for an emergency situation in which you will need extra energy or courage, like trying to win a race or perform in a school play.

Knowledge Organiser – Science Year 5- The Human Body



Key Vocabulary	Definition
foetus	an unborn human more than eight weeks after conception
gestation period	the time in which a foetus develops, beginning with fertilization and ending at birth. It lasts nine months in humans.
adolescence	the period following the onset of puberty during which a young person develops from a child into an adult.
puberty	the period during which adolescents reach sexual maturity and become capable of reproduction.
hormone	a chemical released in a gland that travels to other parts of the body where it helps control how cells and organs do their work.
growth stage	infancy, childhood, adolescence, and adulthood are human growth stages before old age.



Gestational Periods

Mouse	Dog	Polar Bear	Human	Elephant
				
20 days	2 months	8 months	9 months	21 months

Changes in Puberty

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