

SEXUALITY EDUCATION RELATED TOPICS IN SCIENCE

Upper Primary

Topic	Pupils will be able to:
Cycles in animals	<ul style="list-style-type: none">• show an understanding that living things reproduce to ensure continuity of their kind and that many characteristics of an organism are passed on from parents to offspring'• recognise the process of fertilisation in the sexual reproduction of humans

Lower Secondary Science: Express/Normal Academic (E/NA)

Topic: Human Sexual Reproductive System	Pupils will be able to:
Sexual reproduction in humans	<ul style="list-style-type: none"> • recognise that the union of the nuclei of an egg and a sperm (inputs of a system) forms a fertilised egg which develops into a new individual (output of a system) • recognise that the sexual reproductive system facilitates heredity (the passing down of genetic material from one generation to the next) * recognise that a new individual formed through sexual reproduction receives a unique combination of genetic information from the mother (via the egg) and the father (via the sperm), resulting in similarities and differences between individuals and their parents, as well as among siblings • state some of the physical changes that occur during puberty and early adolescence as a result of the effect of hormones on other systems (Note: Details of the hormonal system are not required) • describe briefly how the parts of the human male and female reproductive systems are involved in fertilisation • describe how parts of the female reproductive system are involved in the menstrual cycle • show an awareness that substance abuse (e.g., smoking, alcohol consumption and drug abuse) can have negative effects on the foetus • outline how temporary and permanent birth control methods prevent conception by disrupting certain processes and/or the functions of certain organs in the reproductive system • evaluate the consequences and issues relating to abortion and pre-marital sex
Sexually Transmitted Infections (STIs)	<ul style="list-style-type: none"> • state the harmful consequences of sexually transmitted infections (STIs) like syphilis, gonorrhoea and AIDS • state that some bacterial STIs can be cured by antibiotics, but not viral STIs
Medical advancements in human reproduction	<ul style="list-style-type: none"> *suggest reasons for the world's growing human population (e.g., advances in medicine, improved sanitation)

*optional for LSS N(A)

Lower Secondary Science: Normal Technical N(T)

Topic: Human Reproduction	Pupils will be able to
Sexual reproduction in humans	<ul style="list-style-type: none"> • state the physical changes that occur during puberty • identify the organs in the human male reproductive system (testes, sperm ducts, urethra and penis) and describe their functions • identify the organs in the human female reproductive system (ovaries, fallopian tubes, uterus, cervix and vagina) and describe their functions • describe the menstrual cycle • describe the process of fertilisation in humans • recognise the possible consequences of abortion and pre-marital /casual sex
Sexually Transmitted Infections (STIs)	<ul style="list-style-type: none"> • state how sexually transmitted infections can spread • state that sexually transmitted infections can be caused by bacteria or viruses (e.g. gonorrhoea and syphilis by bacteria; AIDS by virus) • state that some sexually transmitted infections caused by bacteria can be cured by antibiotics, but not those caused by viruses
Medical advancements in human reproduction	<ul style="list-style-type: none"> • state and explain how some temporary methods (e.g. use of condom/diaphragm) and permanent methods of birth control (e.g. vasectomy/ligation) prevent pregnancy • recognise that temporary methods of birth control are not 100% effective in preventing pregnancy and in the spread of sexually transmitted infections • recognise the following forms of facilitated reproduction: artificial insemination and in-vitro fertilisation

GCE O-Level Biology; O-Level Science (Biology)

Topic: Reproduction	Pupils will be able to
Sexual reproduction in humans	<ul style="list-style-type: none"> • define sexual reproduction as the process involving the fusion of nuclei of male and female gametes to form a zygote and the production of genetically dissimilar offspring • identify the male reproductive system and state the functions of: testes, scrotum, sperm ducts, prostate gland, urethra and penis • identify the female reproductive system and state the functions of: ovaries, oviducts, uterus, cervix and vagina • outline the menstrual cycle with reference to the alternation of menstruation and ovulation, the natural variation in its length, and the fertile and infertile phases of the cycle with reference to the effects of progesterone and oestrogen only • describe fertilisation and early development of the zygote simply in terms of the formation of a ball of cells which becomes implanted in the wall of the uterus • state the functions of the amniotic sac and the amniotic fluid <i>(For O-Level Biology Only)</i> • describe the functions of the placenta and umbilical cord in relation to exchange of dissolved nutrients, gases and excretory products (structural details are not required) <i>(For O-Level Biology Only)</i>
Sexually Transmitted Infections (STIs)	<ul style="list-style-type: none"> • discuss the spread of human immunodeficiency virus (HIV) and methods by which it may be controlled.