

Key Elements: Human Biology (Reproductive System)**Estimated Time: 9–11 hours**

By the end of this course, students will have an understanding of the structures and function of the male and female reproductive systems.

Vocabulary

acrosome, anterior pituitary, cervix, clitoris, corpus luteum, Cowper's glands, ductus (vas) deferens, endometrium, epididymis, estrogen, follicles, follicle-stimulating hormone (FSH), follicular phase, gonadotropin-releasing hormone (GnRH), head, homeostatic regulation, human chorionic gonadotropin (HCG), hypothalamus, implantation, interstitial cells, luteal phase, luteinizing hormone (LH), menstruation, midpiece, ovarian cycle, ovaries, oviducts (fallopian tubes), ovulation, oxytocin, penis, positive feedback mechanism, progesterone, proliferative phase, prostate gland, scrotum, secretory phase, seminal fluid, seminal vesicles, seminiferous tubules, sperm, tail (flagellum), testes, testosterone, urethra, urethral opening, uterine cycle, uterus, vagina

Knowledge

- functional structures of the male and female reproductive systems
- components of seminal fluid
- ovarian and uterine cycles
- production, regulation, and functions of male and female hormones

Skills and Attitudes

- interpret graphs, tables, and diagrams
- demonstrate safe and correct dissection technique
- demonstrate correct use of a compound microscope (e.g., to examine sperm)
- demonstrate proper technique for handling and disposing of laboratory materials
- communicate results (e.g., using tables, diagrams, lab reports)
- demonstrate ethical, responsible, co-operative behaviour
- show respect for living things

HUMAN BIOLOGY (REPRODUCTIVE SYSTEM)

Prescribed Learning Outcomes	Suggested Achievement Indicators
<p><i>It is expected that students will:</i></p>	<p><i>The following set of indicators may be used to assess student achievement for each corresponding prescribed learning outcome.</i></p> <p><i>Students who have fully met the prescribed learning outcome are able to:</i></p>
<p>C14 analyse the functional inter-relationships of the structures of the male reproductive system</p>	<ul style="list-style-type: none"> <input type="checkbox"/> identify and give functions for each of the following: <ul style="list-style-type: none"> - testes (seminiferous tubules and interstitial cells) - scrotum - epididymis - ductus (vas) deferens - prostate gland - Cowper’s glands - seminal vesicles - penis - urethra <input type="checkbox"/> describe the path of sperm from the seminiferous tubules to the urethral opening <input type="checkbox"/> list the components seminal fluid (as contributed by the Cowper’s glands, prostate gland, and seminal vesicles), and describe the functions of each component <input type="checkbox"/> identify the tail (flagellum), midpiece, head, and acrosome of a mature sperm and state their functions <input type="checkbox"/> describe the functions of testosterone <input type="checkbox"/> describe the homeostatic regulation of testosterone levels by the hypothalamus, anterior pituitary, and testes
<p>C15 analyse the functional inter-relationships of the structures of the female reproductive system</p>	<ul style="list-style-type: none"> <input type="checkbox"/> identify and give functions for each of the following: <ul style="list-style-type: none"> - ovaries (follicles and corpus luteum) - oviducts (fallopian tubes) - uterus - endometrium - cervix - vagina - clitoris <input type="checkbox"/> describe the functions of estrogen <input type="checkbox"/> describe the sequence of events in the ovarian cycle, with reference the follicular phase, ovulation, and the luteal phase <input type="checkbox"/> describe the sequence of events in the uterine cycle, with reference to menstruation, the proliferative phase, and the secretory phase <input type="checkbox"/> describe the control of the ovarian and uterine cycles by hormones including gonadotropin-releasing hormone (GnRH), follicle-stimulating hormone (FSH), luteinizing hormone (LH), estrogen, and progesterone <input type="checkbox"/> describe the hormonal changes that occur as a result of implantation, including <ul style="list-style-type: none"> - production of human chorionic gonadotropin (HCG) to maintain the corpus luteum - increased production of progesterone by the corpus luteum <input type="checkbox"/> describe a positive feedback mechanism involving oxytocin