

# Reproductive System

**Course**

*Principles of Health Science*

**Unit XVII**

*Anatomy & Physiology*

**Essential Question**

*What are the tissues and systems of the human body?*

**TEKS**

*130.202 (c) 1D, 1E, 1G, 9B*

**Prior Student Learning**

n/a

**Estimated time**

1-2 hours

**Rationale**

To pursue a career in health care, proficiency in anatomy and physiology is vital.

**Objectives**

Upon completion of this lesson, the student will be able to

- identify terms pertaining to the reproductive system;
- identify parts of the female and male reproductive systems;
- review sequence of events in the menstrual cycle;
- summarize events in pregnancy;
- recognize disorders of pregnancy; and
- identify diseases and disorders of the reproductive system.

**Engage**

How do the male and female reproductive systems work?

**Key Points**

- I. Identification of terms
  - A. Circumcision – surgical removal of all or part of the foreskin of the penis
  - B. Embryo – early or developing state of any organism – in humans, the first weeks of uterine life.
  - C. Fetus – latter stages in developing child in uterus from about the third month of pregnancy until birth.
  - D. Fertilization – the union of an egg cell with a sperm cell
  - E. Hermaphrodite – an individual with both male and female sex organs.
  - F. Mastectomy – surgical removal of the breast and auxiliary lymph nodes – frequently done if patient has breast tumors.
  - G. Menstruation – cyclic uterine bleeding which normally occurs at approximately four-week intervals in the absence of pregnancy. Controlled by hormones.
  - H. Ovulation – periodic discharge of ovum from ovary.
  - I. Papanicolaou stain – stain used in detection of cancer cells, particularly of cells from the vagina and cervix.
  - J. Placenta – structure in the uterus through which the fetus gets its nourishment.
  - K. Semen – secretion of reproductive organs of the male containing sperm cells and secretions from accessory reproductive glands.
  - L. Sperm cell – male reproductive cell.

- M. Vasectomy – surgical procedure resulting in sterilization of males. A portion of the ductus deferens on each side is removed, thus preventing sperm cells from reaching the urethra.
- II. Parts of the female reproductive system
  - A. Ovaries – primary reproductive organ of the female, found in upper part of pelvic cavity on each side of uterus, produce ova and female hormones.
  - B. Ovum (pl. ova) – female sex cell.
  - C. Fallopian tube (oviduct) – duct leading from point near ovaries to the uterus. The oviducts transport ova from the body cavity to the uterus.
  - D. Fimbriae – fringe-like extensions from anterior end of oviducts. When an ovum is released from the ovary, the fimbriae work like tentacles to draw the ovum into the uterine tube.
  - E. Uterus – organ for containing and nourishing the embryo during pregnancy.
  - F. Vagina – muscular tube connecting the uterus with the exterior part of the body.
  - G. Vulva – external parts of the female reproductive system.
    - 1. Mons pubis - an elevation of adipose tissue covered by skin and coarse pubic hair.
      - a. Labia Majora: an area of lateral longitudinal folds extending inferiorly and posteriorly.
      - b. Labia Minora: the medial longitudinal folds of the vulva.
      - c. Clitoris: a small, cylindrical mass of nervous and erectile tissue.
      - d. Vestibule: the cleft between the labia minora
  - H. Perineum – pelvic floor - commonly used to mean the area between the vagina opening and the anus.
  - I. Mammary glands - actually modified sudoriferous (sweat) glands. Each gland consists of 15 to 20 lobes or compartments separated by adipose tissue. The areola is the dark, circular, pigmented area that encircles the nipple. The nipple is the raised area on the breast that an infant suckles to receive milk and stimulate lactation or the process of milk production, secretion, and ejection.
- III. Parts of the male reproductive system
  - A. Scrotum – sac containing the testes.
  - B. Penis – male organ of sexual intercourse.
  - C. Testes – male reproductive glands - produce sperm cells and secrete male sex hormones.
  - D. Epididymis – tube inside the testes in which sperm cells are collected and stored until they mature.
  - E. Ductus deferens (vas deferens) – continuation of epididymis

- extending to juncture with the seminal vesicle.
  - F. Seminal vesicles – tubes extending from the area back of the urinary bladder to the ductus deferens. Secretes mucoid substance which nourishes the sperm cells.
  - G. Ejaculatory duct - ejects sperm into the prostatic urethra just prior to ejaculation
  - H. Prostate gland – gland surrounding the neck of the bladder and the urethra. The prostate produces fluid which helps sperm cells maintain their mobility.
  - I. Urethra - serves as the passageway for urine or spermatozoa to the external environment.
  - J. Sperm cell – male reproductive cell.
- IV. Menstrual cycle
- A. Changes in female hormone secretions occur in a 28-day cycle.
  - B. Ovulation occurs at about the middle of each 28-day period.
  - C. Uterine wall prepares for the implantation of fertilized egg.
  - D. If fertilization does not occur, the lining of the uterine wall sloughs off, and is expelled.
  - E. This loss of uterine lining leaves some areas bleeding; thus, blood is also discharged from the uterine wall.
  - F. After 4-7 days, the uterus begins to prepare for pregnancy again.
  - G. Menstruation usually begins in females from ages 10-16 years and indicates production of ova.
  - H. Menopause is the state at which the menstrual cycle ceases, usually occurs between the ages of 45-50.
  - I. The menstrual cycle is controlled by hormones.
- V. Pregnancy
- A. Fertilization normally occurs when the ovum is about one-third of the way down the fallopian tube. The fertilized egg continues the passage down the tube until it reaches the uterus.
  - B. Six to eight days after fertilization, the zygote becomes implanted in the uterine wall.
  - C. The placenta begins to form after implantation occurs. The placenta functions in the exchange of food, gases, and wastes between mother and baby.
  - D. The placenta also serves as a barrier against the passage of bacteria from mother to baby. However, blood-borne diseases such as syphilis and some viruses may be transmitted from mother to baby. Maternal antibodies are transmitted from mother to baby.
  - E. The duration of pregnancy is about 280 days or 40 weeks.
- VI. Disorders of pregnancy
- A. Ectopic pregnancy – fertilized ovum is implanted at a site other

than the uterus, as in a fallopian tube.

B. Abortion – loss of embryo or fetus during the first 20 weeks of pregnancy.

1. Spontaneous abortion – abortion that occurs without having been induced
2. Induced abortion – termination of pregnancy by artificial means
  - a. Criminal abortion – abortions performed illegally
  - b. Therapeutic abortion – abortions performed by physicians for a variety of reasons
3. Miscarriage – loss of fetus between 20 and 28 weeks of pregnancy

VII. Disorders of the reproductive system

A. Amenorrhea – absence of menstrual flow.

B. Cryptorchidism – failure of testes to descend into the scrotum.

C. Dysmenorrhea – painful menstruation.

D. Gonorrhea – infectious venereal disease caused by bacterium; characterized by a purulent urethral discharge.

E. Hermaphroditism – both male and female sex organs found in the same person. There are no known cases in which a true hermaphrodite is fertile, either as a male or female.

F. False hermaphroditism – genitalia of one sex is evident; secondary sex characteristics of opposite sex predominate.

G. Inguinal hernia – rupture in abdominal wall, in region of wall where testes descend from abdominal cavity into scrotum.

H. Leukorrhea – vaginal discharge.

I. Orchitis – inflammation of testes due to trauma, mumps or other infection.

J. Prostatism – any condition resulting in obstruction of the prostate gland, with accompanying retention of urine in the bladder.

K. Salpingitis – inflammation of the fallopian tubes.

L. Sterility – inability to reproduce.

M. Syphilis – infectious venereal disease characterized by lesions which may involve any organ or tissue.

N. Tumor – swelling or enlargement. May occur in any part of the reproductive system, occurs commonly in the breast. May be benign or malignant.

### Activity

- I. Complete the Compare and Contrast Male and Female Anatomy Activity.
- II. Design and create a poster of the menstrual cycle and the ovarian cycle. Write a three paragraph essay discussing the events

- associated with the menstruation process.
- III. Design and create a poster of sexually transmitted diseases, Signs and Symptoms, and Treatment.

### **Assessment**

Successful completion of Compare and Contrast Male and Female Anatomy Activity  
Project Rubric

### **Materials**

Diagram of Human Male Reproductive System  
Diagram of Human Female Reproductive System  
Poster board, markers, colored pencils  
Guest Speakers: OB-GYN, L & D Nurse, Nurse, Midwife

<http://www.bioedonline.org/>

Utah State Office of Education, (2005). *Medical Anatomy and Physiology Teacher Resource CD*. Utah.

### **Accommodations for Learning Differences**

For reinforcement, the student will label anatomical drawings of the reproductive system.

For enrichment, the student will research and report on a specific disorder of the reproductive system.

### **National and State Education Standards**

National Health Science Cluster Standards

HLC01.01 Academic Foundations

Health care workers will know the academic subject matter required (in addition to state high school graduation requirements) for proficiency within their area. They will use this knowledge as needed in their role.

HLC10.01 Technical Skills

Health Care Workers will apply technical skills required for all career specialties. They will demonstrate skills and knowledge as appropriate.

TEKS

130.202 (c)(1)(D) organize, compile, and write ideas into reports and summaries;

130.202 (c)(1)(E) plan and prepare effective oral presentations; and

130.202 (c)(1)(G) describe biological and chemical processes that maintain homeostasis.

130.202 (c)(9)(B) identify wellness strategies for the prevention of disease.

#### Texas College and Career Readiness Standards

##### English Language Arts

II. B. Understand new vocabulary and concepts and use them accurately in reading writing and speaking.

III. B. Develop effective speaking styles for both group and one on one situations.

IV. A. Apply listening skills as an individual and as a member of a group in a variety of settings.

IV. B. 2. Listen actively and effectively in one-on-one communication situations.

##### Science

1.E.1. Use several modes of expression to describe or characterize natural patterns and phenomena. These modes of expression include narrative, numerical, graphical, pictorial, symbolic, and kinesthetic.

1.E.2. Use essential vocabulary of the discipline being studied.

3.A.1. Use correct applications of writing practices in scientific communication.

## Compare and Contrast Male and Female Anatomy

Write a three paragraph essay describing the differences and similarities between the male and female reproductive organs. The names of the structures are listed below.

### Male Organs:

Scrotum	Testes	Vas Deferens
Epididymis	Urethra	Cowper's Gland
Seminal Vesicle	Prostate Gland	Urinary Bladder
Ejaculatory Duct	Ureter	Glans Penis

### Female Organs:

Ovaries	Fimbriae	Labia Majora	Urethra
Uterus	Ova	Labia Minora	Anus
Vestibular glands	Perineum	Vulva	Clitoris

("Medical anatomy and," 2005)

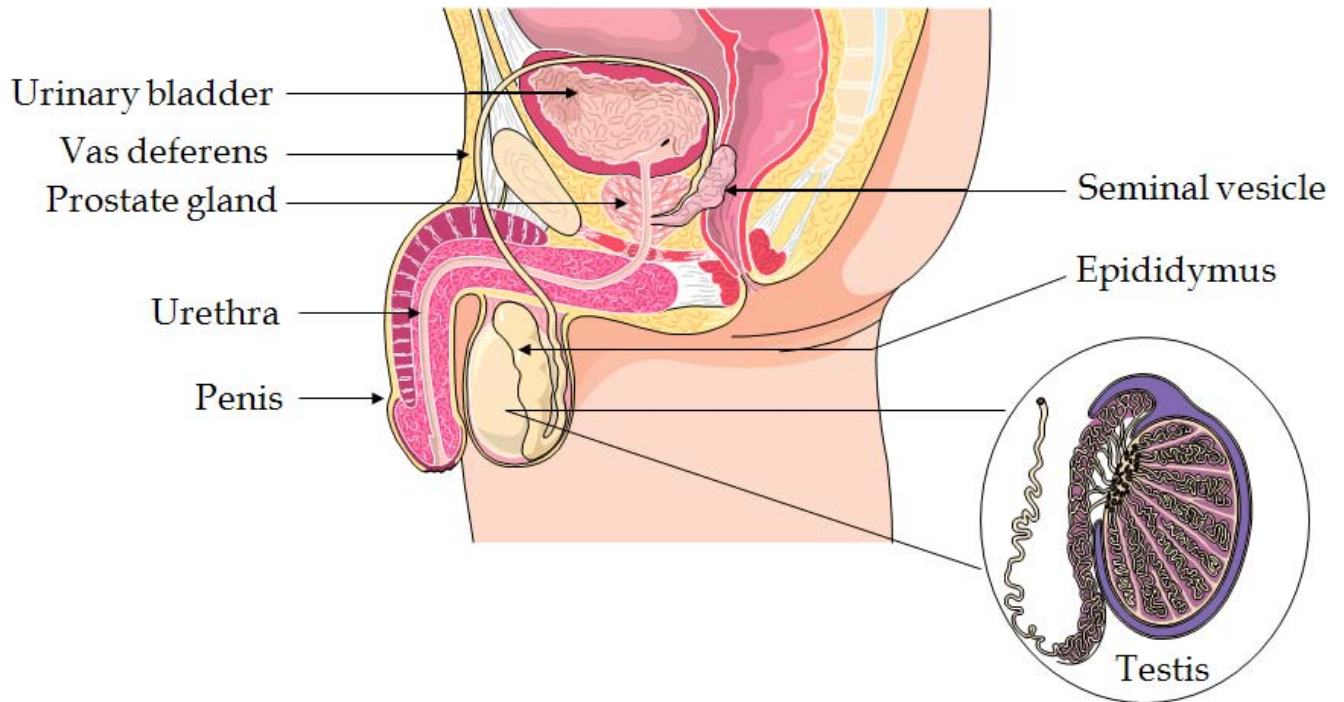
# Project Rubric

Student: \_\_\_\_\_ Date: \_\_\_\_\_

<b>Scoring criteria</b>	4. Excellent	3. Good	2. Needs Some Improvement	1. Needs Much Improvement	N/A
Clearly/effectively communicates the main idea or theme.					
Reflects application of critical thinking.					
Information clearly provided in an organized and thoughtful manner.					
Strong examples used to describe the theme or objective.					
Illustrations follow a logical reasoning.					
Each image and font size is legible to entire audience.					
No spelling, grammatical or punctuation errors.					

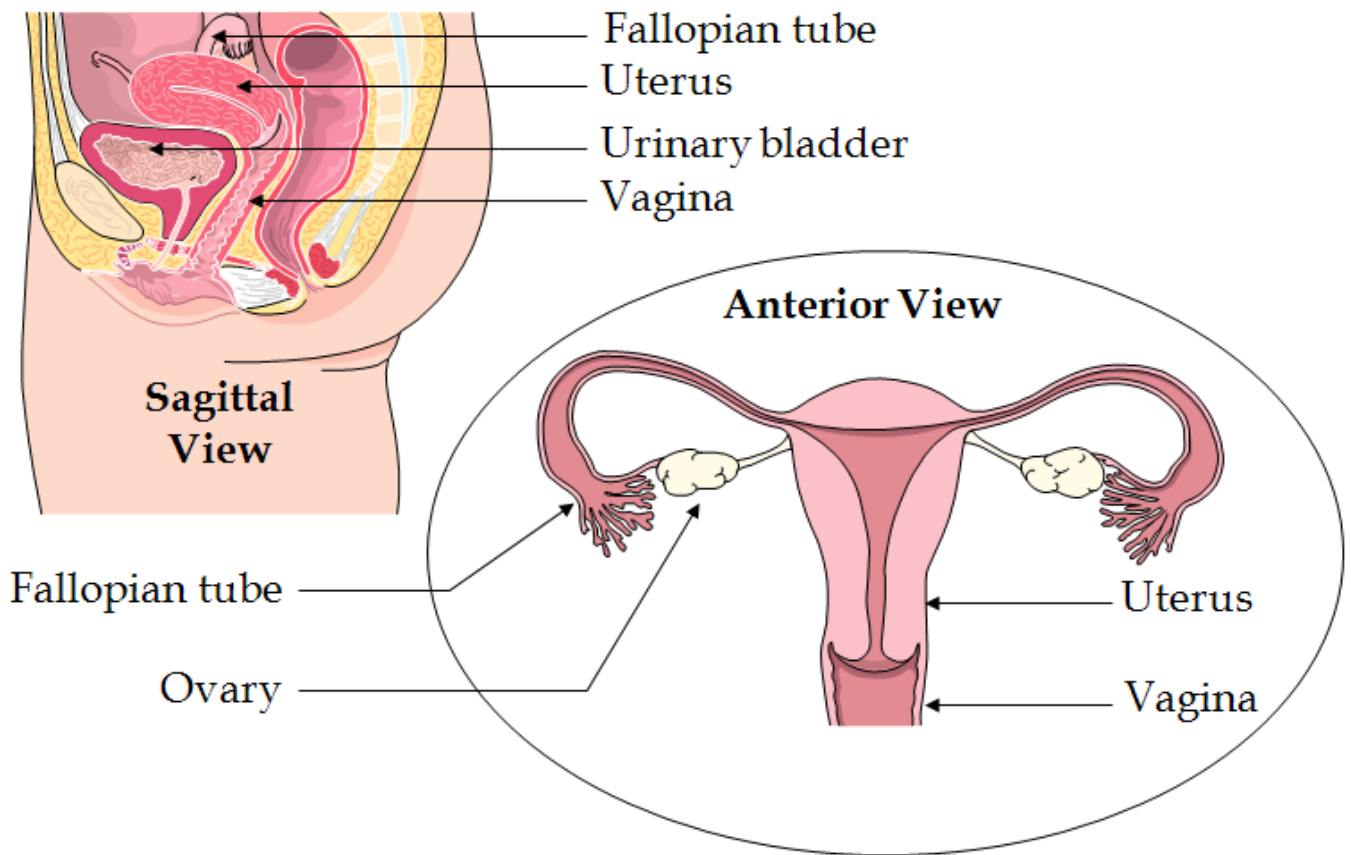
NOTE: N/A represents a response to the performance which is "not appropriate."

## Human Male Reproductive System



BioEd Online

# Human Female Reproductive System



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