

Horse Uterus Model Curriculum

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Curriculum Structure

The *Horse Uterus Model* curriculum is composed of the following lessons. Approximate lesson times are included.

Lesson	Title	Approximate Time
One	Horse Reproductive Systems	45 minutes – 1 hour
	Total	45 minutes – 1 hour

Lesson Structure

Each lesson begins with a Lesson Overview, Lesson Objectives and a Lesson at a Glance table which lists the lesson activities, materials required, suggested preparation steps and approximate class time.

Lesson Sections

The actual lesson follows the overview, which will contain some of the sections described below.

FOCUS

Every lesson begins with a FOCUS activity intended to capture participants' attention. This may be in the form of a small or large class discussion, a game, a review of previous lesson information or a demonstration. During this activity, participants are introduced to the topic of the lesson.

LEARN

The LEARN activity in each lesson varies in its presentation mode. It may be a slide presentation, group activity or demonstration.

REVIEW

The majority of lessons end with a REVIEW activity intended to briefly review the lesson's key messages or main points.

Lesson One – Horse Reproductive Systems

Lesson Overview

This unit introduces terminology relating to male and female reproduction and their respective reproductive tracts including: the components of the tract, their location and their function.

Lesson Objectives

After completing this lesson, participants will be able to:

- Correctly identify terms associated with stallion and mare reproduction.
- Name, locate and describe the functions of the parts of stallion and mare reproductive system.
- Identify the primary male and female reproductive structures and their functions.

Lesson at a Glance

Activity	Materials	Preparation	Approximate class time
FOCUS	• <i>Mammal Gestation Game Sheet</i> • Whiteboard/Blackboard • Whiteboard Markers/Chalk	1. <i>Access Mammal Gestation Game Sheet</i>	5 minutes
LEARN	• <i>Female Reproductive System</i> slide presentation • <i>Male Reproductive System</i> slide presentation • <i>Female and Male Reproductive System Student Notes</i>	1. Prepare to present the <i>Male Reproductive System</i> and <i>Female Reproductive System</i> slide presentations 2. Print/Photocopy <i>Female and Male Reproductive System Student Notes</i> (one per student)	30-35 minutes
REVIEW	• <i>Female Reproductive System Quiz</i> • <i>Male Reproductive System Quiz</i> • <i>Female Reproductive System Quiz – Answer Key</i> • <i>Male Reproductive System Quiz – Answer Key</i>	1. Print/Photocopy <i>Female Reproductive System Quiz</i> and <i>Male Reproductive System Quiz</i> (one per student)	15 minutes

Lesson One – Horse Reproductive Systems

FOCUS: Mammal Gestation Overview

5 Minutes

Purpose:

Participants will learn how the horse gestation period compares to other mammals.

Materials:

- *Mammal Gestation Game Sheet*
- Whiteboard/Blackboard
- Whiteboard Markers/Chalk

Facilitation Steps:

1. Write a column on the whiteboard labeled “Mammals”.
2. Write the following mammals underneath that column on the whiteboard: cow, dog, horse, cat, human.
3. In another column write down the word “gestation”.
4. Have the students guess how long each gestation period lasts.
5. Write down the correct answer as the students get them correct.

Mammal Gestation Game Sheet

Species	Gestation
Cow (Bovine)	9 Months
Dog (Canine)	2 Months
Horse (Equine)	11 Months
Cat (Feline)	2 Months
Human	9 Months

Lesson One – Horse Reproductive Systems

LEARN: Male and Female Reproductive Systems

30-35 Minutes

Purpose:

Participants will gain a better understanding of the parts of the horse reproductive system and the function of each part.

Materials:

- *Female Reproductive System* slide presentation
- *Male Reproductive System* slide presentation
- *Female and Male Reproduction Student Notes*

Facilitation Steps:

1. Prepare the *Female Reproductive System* slide presentation and *Male Reproductive System* slide presentation.
2. Hand out the *Female and Male Reproduction Student Notes*
3. Start with the *Male Reproductive System* slide presentation then move to the *Female Reproductive System* slide presentation.
4. Have students fill out the *Female and Male Reproduction Student Notes* as you go over the slide presentations.

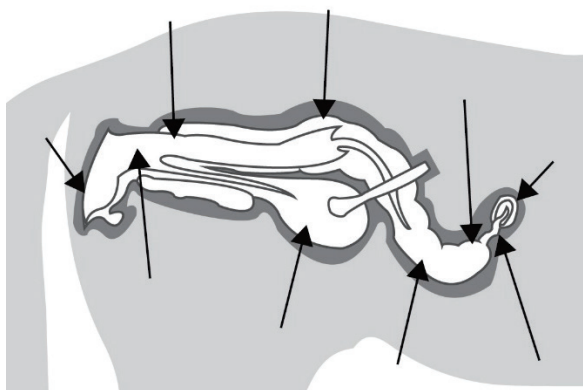
Female and Male Reproductive Systems Student Notes

Name _____

1. Define the following:

- a. Puberty
- b. Ovulation
- c. Copulation
- d. Fertilization
- e. Conception
- f. Estrous Cycle
- g. Estrus
- h. Gestation
- i. Parturition

2. Label the following diagram for female reproductive parts:



3. Define the following female reproductive terms:

- a. Vulva
- b. Vestibule
- c. Vagina
- d. Cervix
- e. Body of Uterus
- f. Horn of Uterus
- g. Fallopian tubes/Oviducts
- h. Ovary
- i. Estrogen

4. Define the following male reproductive terms:

- a. Scrotum
- b. Testes or testicles
- c. Epididymis
- d. Urethra
- e. Glans penis
- f. Bladder
- g. Accessory glands

5. Label the following diagram for male reproductive parts:



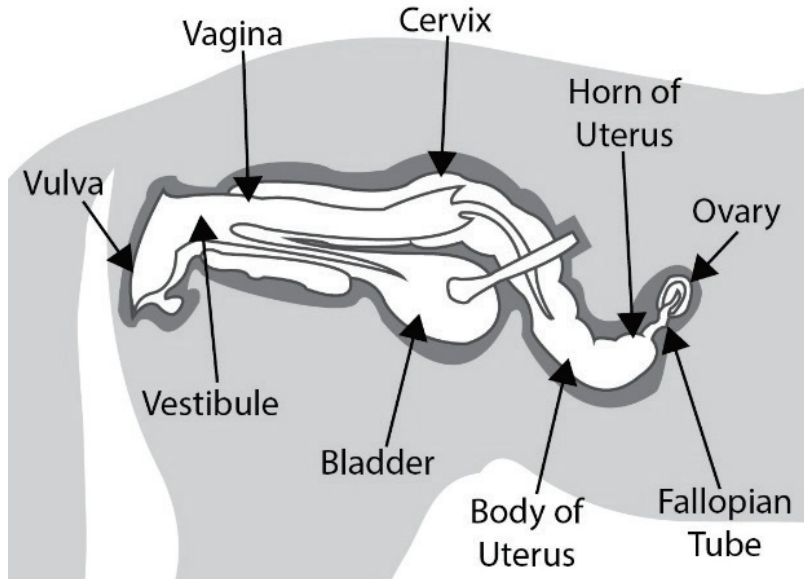
Female and Male Reproductive Systems Student Notes – Answer Key

Name _____

1. Define the following:

- a. Puberty: Sexual maturity
- b. Ovulation: Release of ovum (egg) from ovary
- c. Copulation: The act of mating
- d. Fertilization: Union of male and female sex cells
- e. Conception: Becoming pregnant
- f. Estrous Cycle: Time between when animal is in heat; the entire cycle
- g. Estrus: Actual time animal is in heat, receptive to fertilization
- h. Gestation: Pregnancy
- i. Parturition: The act of giving birth

2. Label the following diagram for female reproductive parts:



3. Define the following female reproductive terms:

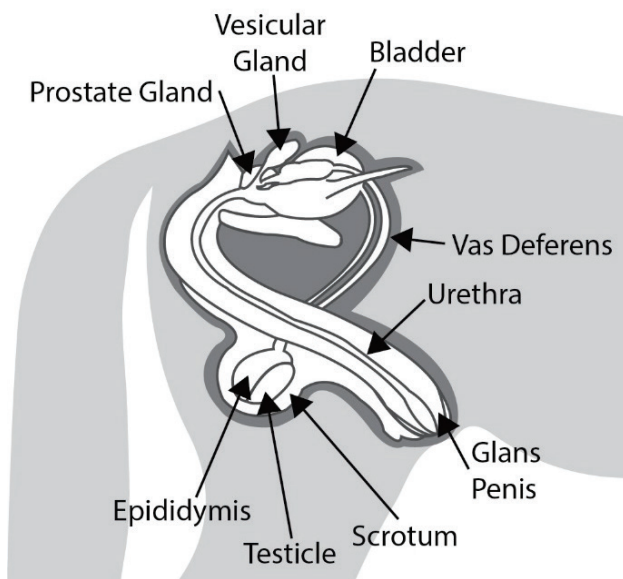
- a. Vulva: **The external opening of the urogenital tract. It is part of the birth canal, and the area where urine is voided.**
- b. Vestibule: **Extends from the external urethral opening to the external vulva, so combines urinary and reproductive functions. The wall contains vestibular glands that keeps the mucosa of the vestibule moist and facilitates coitus and parturition. It also sexually stimulates the male through odor.**
- c. Vagina: **Part of the birth canal that lies in the pelvic girdle between the vulva and the cervix.**
- d. Cervix: **It is a structure of approximately 10 cm (4 in.) in length between the vagina and the uterus. It is the "door to the uterus" and serves to maintain a sterile environment in the uterus. It relaxes when the mare is in heat and closes when not in heat or pregnant.**
- e. Body of uterus: **A large uterine body, just anterior to the cervix, and two relatively short uterine horns that terminate in the oviduct. The uterus is where most embryonic development and nourishment takes place. It also produces hormones and is the receptacle where semen is deposited during natural breeding.**

- f. Uterine horn: **The uterine horns are the points where the uterus and the fallopian tubes meet.**
- g. Fallopian tubes/Oviduct: **The oviducts, also known, as Fallopian tubes, connect the uterine horns and ovaries. During ovulation, the unfertilized ovum enters the oviduct at the infundibulum. The ovum travels to the widened ampulla segment of the oviduct for fertilization to occur.**
- h. Ovary: **It is the primary sex organ of the mare. The ovary produces the ovum (egg) to be fertilized and serves as an endocrine gland producing the hormones estrogen and progesterone.**
- i. Estrogen: **Produced in cells lining mature ovarian follicles. Induces estrus, mammary duct growth, and development of secondary sex character.**

4. Define the following male reproductive terms:

- a. Scrotum: The main functions of the scrotum are to protect the testes and maintain them at a temperature several degrees lower than body temperature.
- b. Testes or testicles: There are two testes enclosed in the scrotum. The testes produce sperm cells and the male sex hormone testosterone.
- c. Epididymis: The epididymis transports sperm from the testes to the deferent duct and is the area for concentration, maturation and storage of the sperm.
- d. Urethra: The urethra passes from the bladder to the end of the penis. Its function is to discharge urine and ejaculate semen.
- e. Glans penis: This is the sensitive end of the penis that enlarges during excitation and copulation.
- f. Bladder: temporary storage of urine.
- g. Accessory glands: The vesicular glands are accessory sex glands and add the gel fraction to the ejaculate.

5. Label the following diagram for male reproductive parts:



Lesson One – Horse Reproductive Systems

REVIEW: Horse Reproductive Systems Quiz

15 Minutes

Purpose:

This brief quiz will provide a means of assessing knowledge gained regarding the reproductive system of the horse.

Materials:

- *Female Reproductive Systems Quiz*
- *Male Reproductive Systems Quiz*
- *Female Reproductive Systems – Answer Key*
- *Male Reproductive Systems Quiz – Answer Key*

Facilitation Steps:

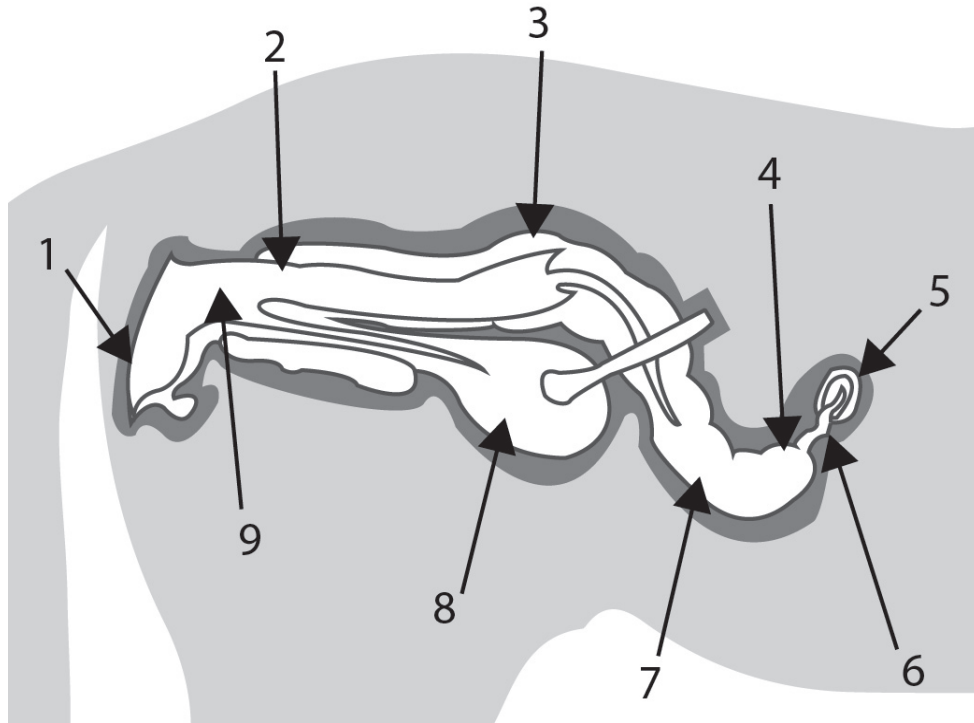
1. Hand out the *Female Reproductive Systems Quiz* and *Male Reproductive Systems Quiz*.
2. Have students complete the quizzes.
3. Collect to correct or correct in class.

Optional: Allow *Female and Male Reproductive Systems Student Notes* to be used with quizzes

Female Reproductive Systems Quiz

Name _____

Label and match the following reproductive parts:



- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____
- 7) _____
- 8) _____
- 9) _____

- Vagina
- Fallopian Tube
- Ovary
- Cervix
- Body of Uterus
- Vulva
- Vestibule
- Horn of Uterus
- Bladder

Name _____

Match each part with their correct function:

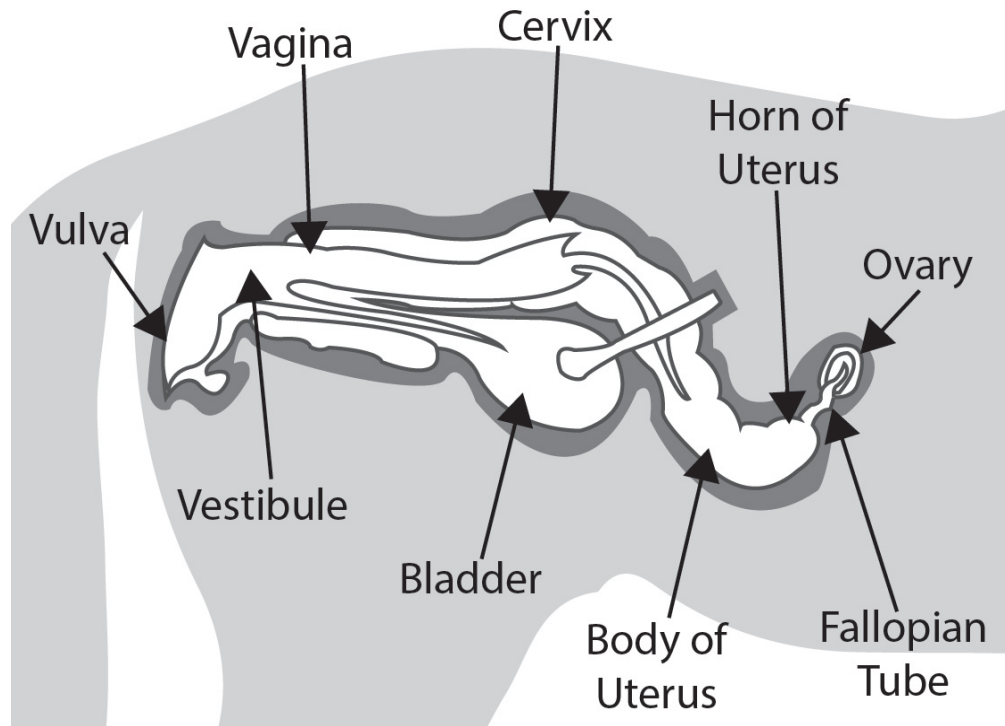
- | | |
|-------------------------------------|---------------------------|
| 1) ____ Vagina | 5) ____ Cervix |
| 2) ____ Horn of uterus | 6) ____ Vestibule |
| 3) ____ Vulva | 7) ____ Body of Uterus |
| 4) ____ Fallopian Tube (Oviduct) | 8) ____ Ovary |

- A. Where the uterus and fallopian tubes meet
- B. Part of the birth canal that lies between the vulva and cervix
- C. Combines urinary and reproductive functions
- D. Where most embryonic development and nourishment takes place
- E. Connects uterine horns and ovaries; fertilization occurs here.
- F. Primary sex organ of the mare
- G. Part of the birth canal and where urine is voided
- H. Maintains a sterile environment in the uterus

Female Reproductive Systems Quiz – Answer Key

Name _____ **KEY**

Label and match the following reproductive parts:



1) Vulva

2) Vagina

3) Cervix

4) Horn of Uterus

5) Ovary

6) Fallopian Tube

7) Body of Uterus

8) Bladder

9) Vestibule

Name _____ **KEY** _____

Match each part with their correct function:

1) **B** Vagina

5) **I** Cervix

2) **A** Horn of uterus

6) **C** Vestibule

3) **H** Vulva

7) **D** Body of Uterus

4) **E** Fallopian Tube (Oviduct)

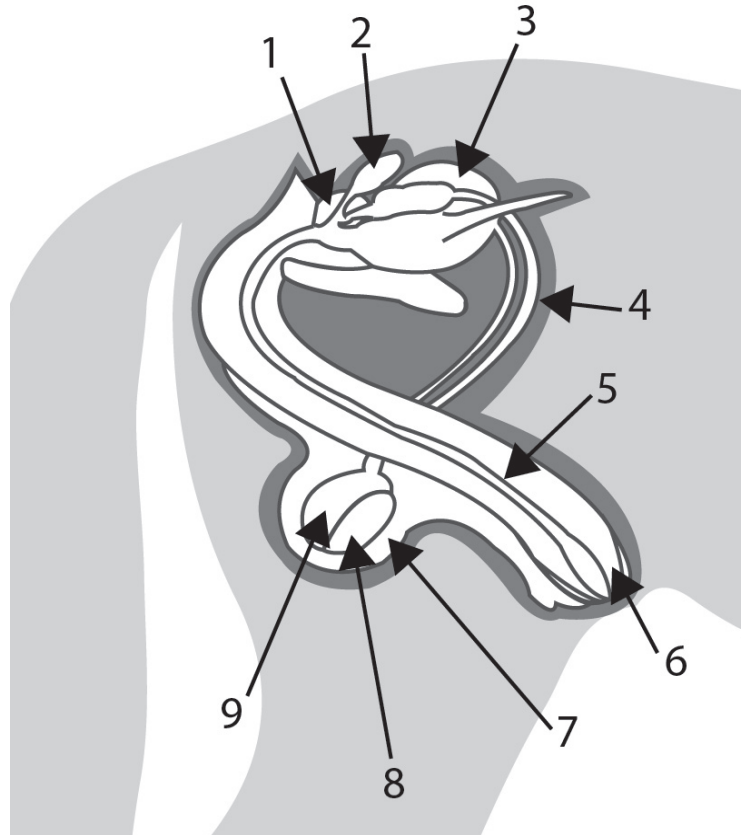
8) **F** Ovary

- A. Where the uterus and fallopian tubes meet
- B. Part of the birth canal that lies between the vulva and cervix
- C. Combines urinary and reproductive functions
- D. Where most embryonic development and nourishment takes place
- E. Connects uterine horns and ovaries; fertilization occurs here.
- F. Primary sex organ of the mare
- G. Part of the birth canal and where urine is voided
- H. Maintains a sterile environment in the uterus

Male Reproductive Systems Quiz

Name _____

Identify and label the following parts:



- 1) _____
- 2) _____
- 3) _____
- 4) _____
- 5) _____
- 6) _____
- 7) _____
- 8) _____
- 9) _____

- A) Epididymis
- B) Bladder
- C) Scrotum
- D) Seminar vesicular gland
- E) Vas deferens
- F) Testicle
- G) Prostate gland
- H) Glans penis
- I) Urethra

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Match each part to their correct function:

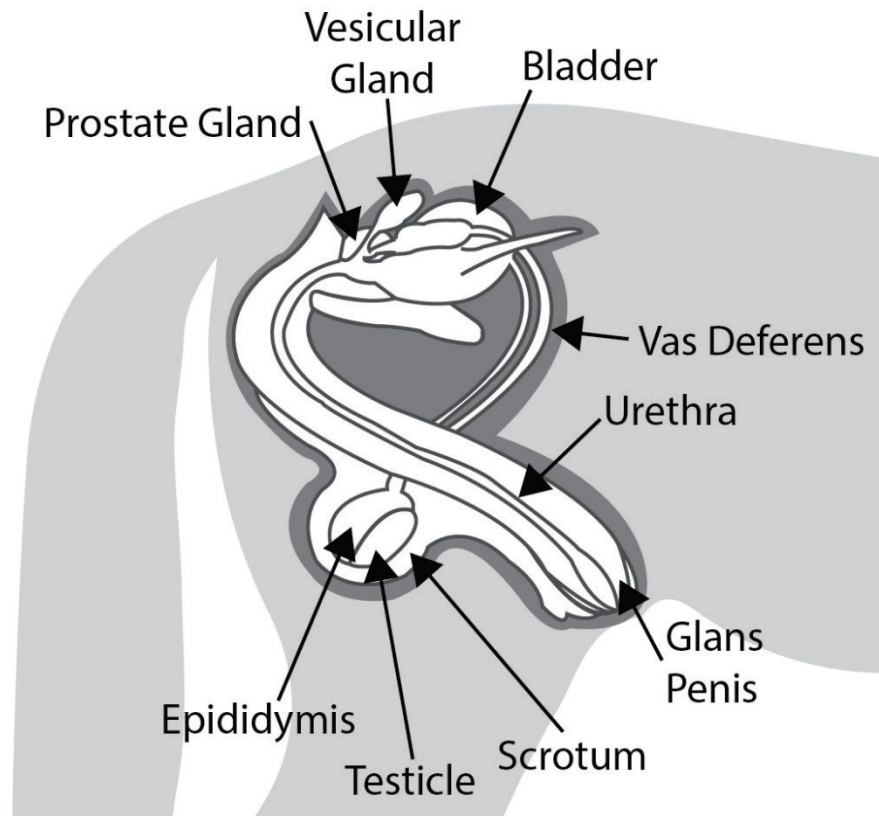
- | | |
|----------------------------|-------------------|
| A) Epididymis | F) Testicle |
| B) Bladder | G) Prostate gland |
| C) Scrotum | H) Glans penis |
| D) Seminal vesicular gland | I) Urethra |
| E) Vas deferens | |

- 1) _____ Protects by regulating temperature.
- 2) _____ Discharges urine and ejaculates sperm.
- 3) _____ Produce sperm cells and testosterone.
- 4) _____ Accessory sex gland that adds fluid to ejaculate.
- 5) _____ Accessory sex gland that adds gel to the ejaculate.
- 6) _____ Used for temporary storage of urine.
- 7) _____ Area for storage and maturation of sperm.
- 8) _____ The sensitive end of the penis that enlarges during sexual copulation.
- 9) _____ Carries sperm to the urethra.

Male Reproductive Systems Quiz – Answer Key

Name _____

Identify and label the following parts:



- 1) Prostate Gland
- 2) Vesicular Gland
- 3) Bladder
- 4) Vas Deferens
- 5) Urethra
- 6) Glans Penis
- 7) Scrotum
- 8) Testicle
- 9) Epididymis

Match each part to their correct function:

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- | | |
|----------------------------|-------------------|
| A) Epididymis | F) Testicle |
| B) Bladder | G) Prostate gland |
| C) Scrotum | H) Glans penis |
| D) Seminal vesicular gland | I) Urethra |
| E) Vas deferens | |

- 1) **C** Protects by regulating temperature.
- 2) **I** Discharges urine and ejaculates sperm.
- 3) **F** Produce sperm cells and testosterone.
- 4) **G** Accessory sex gland that adds fluid to ejaculate.
- 5) **D** Accessory sex gland that adds gel to the ejaculate.
- 6) **B** Used for temporary storage of urine.
- 7) **A** Area for storage and maturation of sperm.
- 8) **H** The sensitive end of the sperm that enlarges during sexual copulation.
- 9) **E** Carries sperm to the urethra.

Sources

1. "Anatomy, Physiology and Reproduction in the Stallion." *Anatomy, Physiology and Reproduction in the Stallion*. N.p., n.d. Web. 24 Feb. 2017. Retrieved from <http://www.omafra.gov.on.ca/english/livestock/horses/facts/11-003.htm>
2. Retrieved from <http://lrrpublic.cli.det.nsw.edu.au/lrrSecure/Sites/Web/8132N/equine/AnatomyPhysiology/Reproduction/reprosystallion.htm>