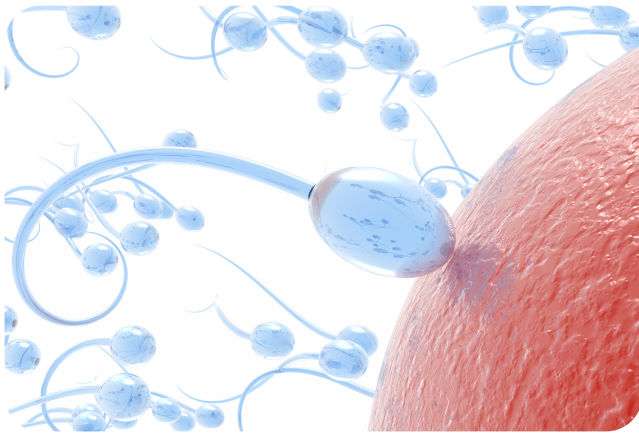


# Chapter 25

## Reproduction and Human Development Worksheets



*(Opening image copyright by BioMedical, 2010. Used under license from Shutterstock.com.)*

- **Lesson 25.1: Male Reproductive System**
- **Lesson 25.2: Female Reproductive System**
- **Lesson 25.3: From Fertilization to Old Age**
- **Lesson 25.4: Sexually Transmitted Infections**

# 25.1 Male Reproductive System

## Lesson 25.1: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. A gamete is a haploid cell that combines with another haploid gamete during fertilization.
- \_\_\_\_\_ 2. Each testis contains more than 90 meters of tiny, tightly packed tubules called seminiferous tubules.
- \_\_\_\_\_ 3. Sperm mature and are stored in the epididymis.
- \_\_\_\_\_ 4. In the first several weeks after fertilization, males and females are essentially the same.
- \_\_\_\_\_ 5. Genes on the X chromosome cause male organ formation.
- \_\_\_\_\_ 6. In the United States, boys generally begin puberty at about age 10 and complete it at about age 18.
- \_\_\_\_\_ 7. Rapid growth occurs during puberty.
- \_\_\_\_\_ 8. A sexually mature male produces hundreds of sperm each day.
- \_\_\_\_\_ 9. Spermatogenesis takes between 9 and 10 weeks.
- \_\_\_\_\_ 10. Sperm are produced in the epididymis and become mature in the seminiferous tubules.
- \_\_\_\_\_ 11. When sperm “swim,” the tail rotates like a propeller.
- \_\_\_\_\_ 12. Hundreds of billions of sperm are released with each ejaculation.
- \_\_\_\_\_ 13. Spermatogenesis involves both mitosis and meiosis.
- \_\_\_\_\_ 14. The part of the sperm called the tip produces enzymes that help the sperm penetrate an egg.
- \_\_\_\_\_ 15. Spermatogonia lining the seminiferous tubule undergo meiosis to form primary spermatocytes.

## Lesson 25.1: Critical Reading

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Read these passages from the text and answer the questions that follow.*

### Sexual Development in Males

The only obvious difference between boys and girls at birth is their reproductive organs. However, even the reproductive organs start out the same in both sexes.

#### Development Before Birth

In the first several weeks after fertilization, males and females are essentially the same except for their chromosomes. Females have two X chromosomes (XX), and males have an X and a Y chromosome (XY). Then, during the second month after fertilization, genes on the Y chromosome of males cause the secretion of testosterone. Testosterone stimulates the reproductive organs to develop into male organs. (Without testosterone, the reproductive organs always develop into female organs.) Although boys have male reproductive organs at birth, the organs are immature and not yet able to produce sperm or secrete testosterone.

#### Puberty and Its Changes

The reproductive organs grow very slowly during childhood and do not mature until puberty. **Puberty** is the period during which humans become sexually mature. In the U.S., boys generally begin puberty at about age 12 and complete it at about age 18. What causes puberty to begin? The hypothalamus in the brain “tells” the pituitary gland to secrete hormones that target the testes. The main pituitary hormone involved is **luteinizing hormone (LH)**. It stimulates the testes to secrete testosterone. Testosterone, in turn, promotes protein synthesis and growth. It brings about most of the physical changes of puberty.

#### Questions

1. What is the difference between the male and female chromosomes?
2. Describe the role of testosterone during development.
3. Define “puberty.” When does puberty begin in boys?
4. What causes puberty to begin?
5. What is luteinizing hormone? What does it do?



## Lesson 25.1: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

- Which statement best describes a gamete?
  - A gamete is a sex cell.
  - A gamete is a cell involved in reproduction.
  - A gamete is a haploid reproductive cell that combines with another haploid gamete during fertilization.
  - Gametes combine during fertilization.
- Structures of the male reproductive system include which of the following? (1) the vas deferens, (2) the epididymis, (3) the fallopian tubes, (4) the seminiferous tubules.
  - 1 and 2
  - 1, 2, and 3
  - 1, 2, and 4
  - 1, 2, 3, and 4
- In boys, the adolescent growth spurt
  - is controlled by testosterone.
  - can be about 10 centimeters per year.
  - rapidly continues for several years.
  - all of the above
- During spermatogenesis,
  - sperm are produced in the seminiferous tubules of the testes and become mature in the epididymis.
  - sperm are produced in the epididymis of the testes and become mature in the seminiferous tubules.
  - sperm are produced in the vas deferens of the testes and become mature in the epididymis.
  - sperm are produced in the vas deferens of the testes and become mature in the seminiferous tubules.
- Structures of a mature sperm cell include
  - a tail.
  - the mitochondrial segment.
  - an acrosome.
  - all of the above.
- What causes puberty to begin?
  - The secretion of testosterone from the testes.
  - The initial release of luteinizing hormone from the pituitary gland.
  - New protein synthesis and growth.
  - The development of testes.
- The epididymis
  - is a very long coiled tube inside the scrotum.
  - is where sperm mature.
  - is where sperm are stored.
  - all of the above

8. How many sperm are released with each ejaculation?
- (a) hundreds
  - (b) thousands
  - (c) millions
  - (d) hundreds of millions

# Lesson 25.1: Vocabulary I

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Match the vocabulary word with the proper definition.*

## Definitions

- \_\_\_\_\_ 1. chemical messengers that control sexual development and reproduction
- \_\_\_\_\_ 2. produce sperm and secrete testosterone
- \_\_\_\_\_ 3. the period during which humans become sexually mature
- \_\_\_\_\_ 4. the male sex hormone
- \_\_\_\_\_ 5. the process of producing mature sperm
- \_\_\_\_\_ 6. stimulates the testes to secrete testosterone
- \_\_\_\_\_ 7. an external male genital organ
- \_\_\_\_\_ 8. where sperm mature and are stored until they leave the body
- \_\_\_\_\_ 9. rapid growth during puberty
- \_\_\_\_\_ 10. consists of structures that produce gametes and secrete sex hormones
- \_\_\_\_\_ 11. process of releasing sperm
- \_\_\_\_\_ 12. the fluid that carries sperm through the urethra

## Terms

- a. adolescent growth spurt
- b. ejaculation
- c. epididymis
- d. luteinizing hormone
- e. penis
- f. puberty
- g. reproductive system
- h. semen
- i. sex hormones
- j. spermatogenesis
- k. testis
- l. testosterone

## Lesson 25.1: Vocabulary II

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Fill in the blank with the appropriate term.*

1. A \_\_\_\_\_ is a haploid cell that combines with another haploid gamete during fertilization.
2. \_\_\_\_\_ is the male sex hormone.
3. Each testis contains more than 30 meters of tiny, tightly packed \_\_\_\_\_ tubules.
4. The \_\_\_\_\_ is a coiled tube about 6 meters long lying atop the testis.
5. \_\_\_\_\_ is the fluid that carries sperm through the urethra and out of the body.
6. The two sex chromosomes in males are \_\_\_\_\_.
7. \_\_\_\_\_ is the period during which humans become sexually mature.
8. \_\_\_\_\_ are diploid, sperm-producing cells.
9. \_\_\_\_\_ hormone stimulates the testes to secrete testosterone.
10. The process of producing mature sperm is called \_\_\_\_\_.
11. After spermatids form, they mature in the \_\_\_\_\_.
12. A sexually mature male produces hundreds of \_\_\_\_\_ of sperm each day.



## Lesson 25.1: Critical Writing

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Thoroughly answer the question below. Use appropriate academic vocabulary and clear and complete sentences.*

A mature sperm cell has several structures that help it reach and penetrate an egg. These structures include the tail, mitochondria, and acrosome. How does each structure contribute to the sperm's function?

## 25.2 Female Reproductive System

### Lesson 25.2: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. The female reproductive system breast-feeds a baby before birth.
- \_\_\_\_\_ 2. The uterus is where a fetus grows and develops until birth.
- \_\_\_\_\_ 3. A female produces all the eggs she will ever make before birth.
- \_\_\_\_\_ 4. Just like boys, girls begin puberty around the age of 12.
- \_\_\_\_\_ 5. Two pituitary hormones — follicle hormone and luteinizing-stimulating hormone — start puberty in girls.
- \_\_\_\_\_ 6. Menarche is the beginning of menstruation.
- \_\_\_\_\_ 7. After menstruation begins, two eggs typically matures each month — one from each ovary.
- \_\_\_\_\_ 8. During oogenesis, one primary oocyte produces four mature eggs.
- \_\_\_\_\_ 9. During ovulation, the follicle that protects the developing egg ruptures, and the oocyte is forced out of the ovary.
- \_\_\_\_\_ 10. If fertilization is to occur, it will happen in a fallopian tube.
- \_\_\_\_\_ 11. A mature egg forms only if a secondary oocyte is fertilized by a sperm.
- \_\_\_\_\_ 12. During oogenesis, the cytoplasm divides equally between the resulting cells.
- \_\_\_\_\_ 13. The average menstrual cycle lasts between 4 and 6 weeks.
- \_\_\_\_\_ 14. During menstruation, the endometrium breaks away from the uterus and is discarded from the body.
- \_\_\_\_\_ 15. Ovulation occurs around the middle of a monthly cycle.

# Lesson 25.2: Critical Reading

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

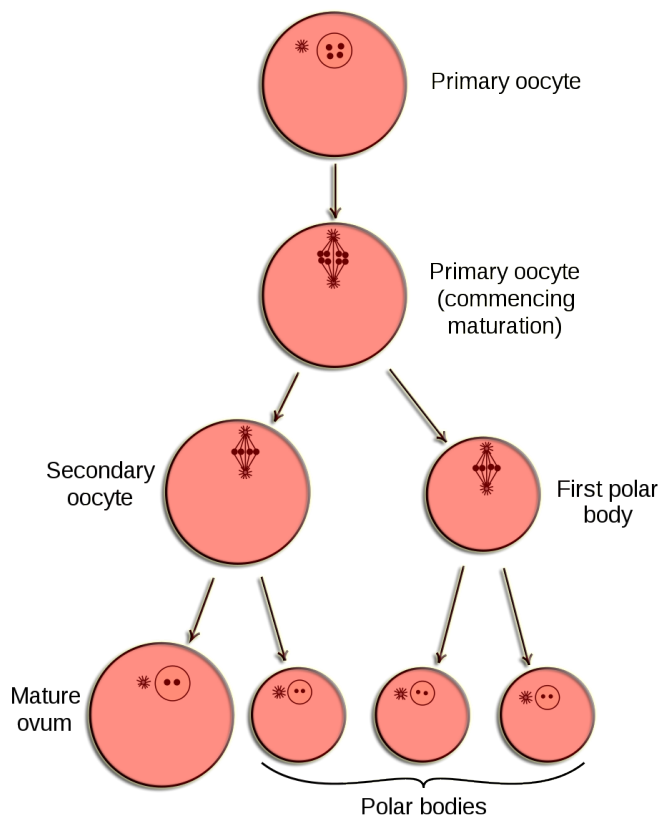
Read these passages from the text and answer the questions that follow.

## Egg Production

At birth, a female’s ovaries contain all the eggs she will ever produce. However, the eggs do not start to mature until she enters puberty. After menarche, one egg typically matures each month until a woman reaches middle adulthood.

## Oogenesis

The process of producing eggs in the ovary is called **oogenesis**. Eggs, like sperm, are haploid cells, and their production occurs in several steps that involve different types of cells, as shown in the figure below. You can follow the process of oogenesis in the figure as you read about it below.



(Image courtesy of Mysid and under the public domain.)

Oogenesis begins long before birth when an oogonium with the diploid number of chromosomes undergoes mitosis. It produces a diploid daughter cell called a primary oocyte. The primary oocyte, in turn, starts to go through the first cell division of meiosis (meiosis I). However, it does not complete meiosis until much later. The primary oocyte remains in a resting state, nestled in a tiny, immature follicle until puberty.

## Maturation of a Follicle

Beginning in puberty, each month one of the follicles and its primary oocyte starts to mature. The primary oocyte resumes meiosis and divides to form a secondary oocyte and a smaller cell, called a polar body. Both the secondary oocyte and polar body are haploid cells. The secondary oocyte has most of the cytoplasm from the original cell and is much larger than the polar body.

## Ovulation and Fertilization

After 12–14 days, when the follicle is mature, it bursts open, releasing the secondary oocyte from the ovary. This event is called **ovulation**. The follicle, now called a corpus luteum, starts to degenerate, or break down. After the secondary oocyte leaves the ovary, it is swept into the nearby Fallopian tube by the waving, fringe-like end.

If the secondary oocyte is fertilized by a sperm as it is passing through the Fallopian tube, it completes meiosis and forms a mature egg and another polar body. (The polar bodies break down and disappear.) If the secondary oocyte is not fertilized, it passes into the uterus as an immature egg and soon disintegrates.

### Questions

1. A man produces sperm daily after puberty. When does a woman produce her eggs?
2. What is oogenesis?
3. When does the haploid egg form?
4. What is ovulation? When does ovulation occur?
5. When is meiosis completed?

## Lesson 25.2: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

- Functions of the female reproductive system include
  - receiving eggs during sexual intercourse.
  - delivering a baby after birth.
  - breast feeding a baby before birth.
  - supporting the development of a fetus.
- Female reproductive structures include which of the following? (1) the Fallopian tubes, (2) the ovaries, (3) the uterus, (4) the pelvis.
  - 1 and 2
  - 2 and 3
  - 1, 2, and 3
  - 1, 2, 3, and 4
- Puberty in girls starts when
  - the pituitary gland secretes estrogen, luteinizing hormone, and follicle-stimulating hormone.
  - the pituitary gland secretes luteinizing hormone and follicle-stimulating hormone.
  - the ovaries secrete luteinizing hormone and follicle-stimulating hormone.
  - the ovaries secrete estrogen and follicle-stimulating hormone.
- The correct sequence of events in the ovary is
  - the development of the oocyte - development of the follicle - degeneration of the corpus luteum - ovulation.
  - the development of the oocyte - development of the follicle - ovulation - degeneration of the corpus luteum.
  - the development of the follicle - development of the oocyte - ovulation - degeneration of the corpus luteum.
  - the development of the oocyte - ovulation - development of the follicle - degeneration of the corpus luteum.
- The corpus luteum
  - is the remains of the follicle after ovulation.
  - is the remains of the ovary after ovulation.
  - is the remains of the oocyte after ovulation.
  - none of the above
- During menstruation,
  - the endometrium of the uterus is shed from the body.
  - the uterus is shed from the body.
  - the corpus letuem is shed from the body.
  - excess sperm is discarded from the uterus.
- If the egg is fertilized,
  - the corpus letuem will be maintained and help nourish the egg.
  - the endometrium of the uterus will be maintained and help nourish the egg.
  - the ovary will be maintained and help nourish the egg.
  - the oocyte will be maintained and help nourish the egg.

8. Menopause

- (a) is when a woman's menstrual cycles slow down and eventually stop.
- (b) starts in the mid to late 40s.
- (c) occurs and women can no longer produce eggs.
- (d) all of the above

## Lesson 25.2: Vocabulary I

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Match the vocabulary word with the proper definition.*

### Definitions

- \_\_\_\_\_ 1. a muscular organ where a fetus grows and develops until birth
- \_\_\_\_\_ 2. stimulates the ovary to produce estrogen
- \_\_\_\_\_ 3. external female reproductive structures
- \_\_\_\_\_ 4. the process of producing eggs in the ovary
- \_\_\_\_\_ 5. the female sex hormone
- \_\_\_\_\_ 6. the process in which the endometrium of the uterus is shed from the body
- \_\_\_\_\_ 7. a tube-like structure that receives sperm during sexual intercourse, and it provides a passageway for a baby to leave during birth
- \_\_\_\_\_ 8. the beginning of menstruation
- \_\_\_\_\_ 9. a period during which their menstrual cycles slow down and eventually stop
- \_\_\_\_\_ 10. release of the secondary oocyte from the ovary
- \_\_\_\_\_ 11. has a fringe-like structure that collects eggs from the ovary
- \_\_\_\_\_ 12. typically occurs each month in a sexually mature female unless she is pregnant

### Terms

- a. estrogen
- b. Fallopian tube
- c. follicle-stimulating hormone
- d. menarche
- e. menopause
- f. menstrual cycle
- g. menstruation
- h. oogenesis
- i. ovulation
- j. uterus
- k. vagina
- l. vulva

## Lesson 25.2: Vocabulary II

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Fill in the blank with the appropriate term.*

1. \_\_\_\_\_ is the female sex hormone.
2. The \_\_\_\_\_ is where a fetus grows and develops until birth.
3. From an ovary, an egg is swept into a \_\_\_\_\_ tube.
4. The two sex chromosomes in females are \_\_\_\_\_.
5. Luteinizing hormone and \_\_\_\_\_ hormone stimulate the ovary to produce estrogen.
6. Girls typically reach their adult height by about age \_\_\_\_\_.
7. Menarche is the beginning of \_\_\_\_\_.
8. After puberty, once a month a follicle matures and its primary oocyte resumes \_\_\_\_\_.
9. When the follicle is mature, the secondary oocyte is released in a process called \_\_\_\_\_.
10. Menstruation is the process in which the endometrium of the \_\_\_\_\_ is shed from the body.
11. The process of producing eggs in the ovary is called \_\_\_\_\_.
12. At birth, a female's ovaries contain all the \_\_\_\_\_ she will ever produce.
13. Ovulation occurs around day \_\_\_\_\_ of the monthly menstrual cycle.
14. After \_\_\_\_\_, ovaries no longer produce eggs.



## Lesson 25.2: Critical Writing

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Thoroughly answer the question below. Use appropriate academic vocabulary and clear and complete sentences.*

Describe the phases of the menstrual cycle.

## 25.3 From Fertilization to Old Age

### Lesson 25.3: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. An egg will only complete meiosis if fertilized.
- \_\_\_\_\_ 2. During fertilization, the nuclei of the egg and sperm fuse, and the resulting diploid cell is the zygote.
- \_\_\_\_\_ 3. Cleavage refers to a series of cell division soon after fertilization resulting in a ball of cells called a morula.
- \_\_\_\_\_ 4. The blastocyst has three cell layers: the ectoderm, the mesoderm, and the endoderm.
- \_\_\_\_\_ 5. Differentiation is the process by which specialized cells become unspecialized.
- \_\_\_\_\_ 6. The mesoderm develops into muscle tissue.
- \_\_\_\_\_ 7. From the end of the eighth week until birth, the developing organism is referred to as an embryo.
- \_\_\_\_\_ 8. Birth typically occurs at about 40 weeks after fertilization.
- \_\_\_\_\_ 9. The placenta delivers oxygen and nutrients from the fetus to the mother.
- \_\_\_\_\_ 10. The fetus is connected to the placenta through the umbilical cord.
- \_\_\_\_\_ 11. The pregnant mother must avoid toxic substances such as alcohol.
- \_\_\_\_\_ 12. Most people over 65 have mood swings because of surging hormones.
- \_\_\_\_\_ 13. By age 4, most children speak fluently and are learning to read and write.
- \_\_\_\_\_ 14. Adolescence is the period of transition between the beginning of puberty and adulthood.
- \_\_\_\_\_ 15. Infants have well-developed senses of touch, hearing, and smell.

## Lesson 25.3: Critical Reading

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

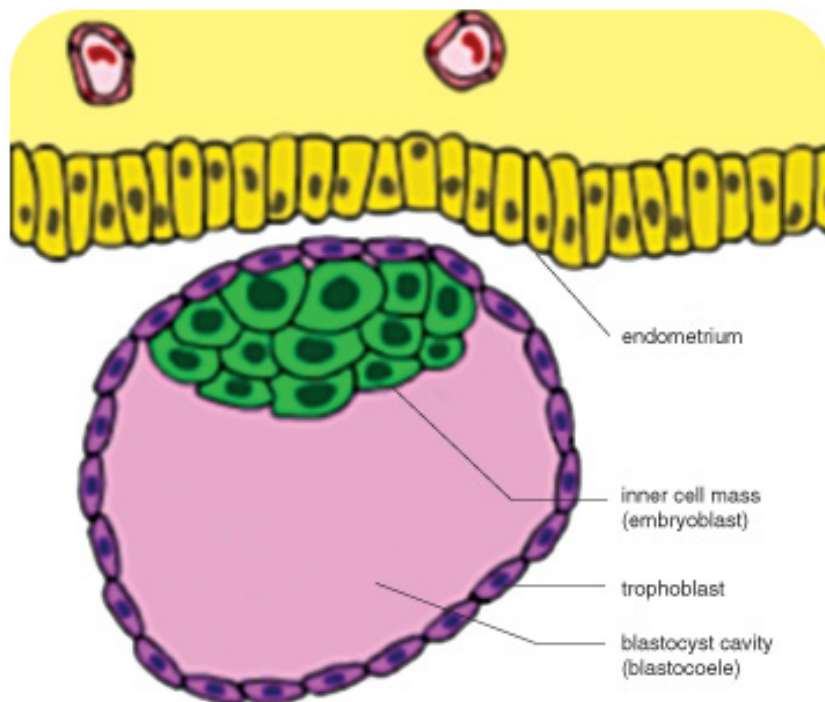
Read these passages from the text and answer the questions that follow.

### Cleavage and Implantation

When a sperm penetrates the egg, it triggers the egg to complete meiosis. The sperm also undergoes changes. Its tail falls off, and its nucleus fuses with the nucleus of the egg. The resulting cell, called a zygote, contains all the chromosomes needed for a new human organism. Half the chromosomes come from the egg and half from the sperm.

### Morula and Blastocyst Stages

The zygote spends the next few days traveling down the Fallopian tube toward the uterus, where it will take up residence. As it travels, it divides by mitosis several times to form a ball of cells called a morula. The cell divisions are called cleavage. They increase the number of cells but not the overall size of the new organism. As more cell divisions occur, a fluid-filled cavity forms inside the ball of cells. At this stage, the ball of cells is called a **blastocyst**. The cells of the blastocyst form an inner cell mass and an outer cell layer, as shown in the figure below. The inner cell mass is called the embryoblast. These cells will soon develop into an embryo. The outer cell layer is called the trophoblast. These cells will develop into other structures needed to support and nourish the embryo.



Blastocyst. The blastocyst consists of an outer layer of cells called the trophoblast and an inner cell mass called the embryoblast. *(This image is under GNU-FDL 1.2.)*

### Implantation

The blastocyst continues down the Fallopian tube and reaches the uterus about 4 or 5 days after fertilization. When the outer cells of the blastocyst contact cells of the endometrium lining the uterus, the blastocyst embeds in the endometrium. The process of embedding is called **implantation**. It generally occurs about a week after fertilization.

*Questions*

1. Describe a zygote.
2. What is a morula?
3. What is a blastocyst? Describe the blastocyst.
4. What is implantation? When does implantation occur?

## Lesson 25.3: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

- Fertilization takes place in
  - a Fallopian tube.
  - the uterus.
  - the egg.
  - a zygote.
- Which is the correct order of events?
  - implantation - formation of the morula - formation of the blastocyst - cleavage
  - cleavage - formation of the morula - formation of the blastocyst - implantation
  - cleavage - formation of the blastocyst - formation of the morula - implantation
  - implantation - formation of the blastocyst - formation of the morula - cleavage
- The blastocyst is
  - the ball of cells that forms after implantation.
  - the initial ball of cells that develops from the zygote.
  - a ball of cells with a fluid-filled cavity that forms a few days after fertilization.
  - the inner cell mass of cells that forms the embryo.
- After implantation occurs, the developing organism is called
  - an embryoblast.
  - an embryo.
  - a fetus.
  - a baby.
- The initial three distinct cell layers in the developing organisms include
  - the endoderm.
  - the ectoderm.
  - the mesoderm.
  - all of the above.
- During embryonic development, which event occurs first?
  - The lungs begin to form.
  - The heart begins to beat.
  - The face begins to look human.
  - The eyes start to form.
- The placenta
  - is an enclosed membrane that surrounds and protects the fetus.
  - is made up of a large mass of blood vessels from both the mother and fetus.
  - mixes the mother's and fetus's blood to exchange substances.
  - allows the fetus to move freely.
- Adolescence is the period of transition between the beginning of puberty and adulthood. During adolescence, individuals
  - may have mood swings because of surging hormones.
  - usually become more attached to their parents.
  - generally develop the ability to think.

(d) all of the above

## Lesson 25.3: Vocabulary I

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Match the vocabulary word with the proper definition.*

### Definitions

- \_\_\_\_\_ 1. ball of cells that forms soon after fertilization
- \_\_\_\_\_ 2. developing organism from the end of the eighth week until birth
- \_\_\_\_\_ 3. the first year of life after birth
- \_\_\_\_\_ 4. the period of transition between the beginning of puberty and adulthood
- \_\_\_\_\_ 5. the process by which unspecialized cells become specialized
- \_\_\_\_\_ 6. the carrying of one or more offspring from fertilization until birth
- \_\_\_\_\_ 7. a temporary organ that allows the exchange of substances between the mother and fetus
- \_\_\_\_\_ 8. the process of childbirth
- \_\_\_\_\_ 9. ball of cells with a fluid-filled cavity
- \_\_\_\_\_ 10. an enclosed membrane that surrounds and protects the fetus
- \_\_\_\_\_ 11. the first cell of the new organism
- \_\_\_\_\_ 12. stage of cell divisions that occurs soon after fertilization
- \_\_\_\_\_ 13. the blastocyst after implantation
- \_\_\_\_\_ 14. the process of embedding the blastocyst into the uterus

### Terms

- a. adolescence
- b. amniotic sac
- c. blastocyst
- d. cleavage
- e. differentiation
- f. embryo
- g. fetus
- h. implantation
- i. infancy
- j. labor
- k. morula
- l. placenta
- m. pregnancy
- n. zygote

## Lesson 25.3: Vocabulary II

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Fill in the blank with the appropriate term.*

1. Fertilization occurs in a \_\_\_\_\_ tube.
2. When a sperm penetrates the egg, it triggers the egg to complete \_\_\_\_\_.
3. The cell that results from fertilization is called a \_\_\_\_\_.
4. A \_\_\_\_\_ is a ball of cells with a fluid-filled cavity that forms a few days after fertilization.
5. \_\_\_\_\_ is the process of embedding the blastocyst into the uterus lining.
6. After implantation occurs, the blastocyst is called an \_\_\_\_\_.
7. The three distinct cell layers of the embryo are the \_\_\_\_\_, mesoderm, and endoderm.
8. \_\_\_\_\_ is the process by which unspecialized cells become specialized.
9. From the end of the eighth week until birth, the developing organism is referred to as a \_\_\_\_\_ - \_\_\_\_\_.
10. Birth typically occurs at about \_\_\_\_\_ weeks after fertilization.
11. The \_\_\_\_\_ provides oxygen and nutrients to the developing fetus.
12. The \_\_\_\_\_ is an enclosed membrane that surrounds and protects the fetus.
13. \_\_\_\_\_ is the first year of life after birth.
14. \_\_\_\_\_ is the period of transition between the beginning of puberty and adulthood.



## Lesson 25.3: Critical Writing

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Thoroughly answer the question below. Use appropriate academic vocabulary and clear and complete sentences.*

Explain how the embryo forms specialized cells and organs.

# 25.4 Sexually Transmitted Infections

## Lesson 25.4: True or False

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Write true if the statement is true or false if the statement is false.*

- \_\_\_\_\_ 1. A sexually transmitted infection is an infection that spreads mainly through sexual contact.
- \_\_\_\_\_ 2. The common cold can be considered a STI.
- \_\_\_\_\_ 3. Most STIs are caused by viruses or bacteria.
- \_\_\_\_\_ 4. Viral STIs can be cured with antibiotics.
- \_\_\_\_\_ 5. Many STIs can be transmitted through blood and semen.
- \_\_\_\_\_ 6. STIs become more common the older a person gets.
- \_\_\_\_\_ 7. Some of the most common bacterial STIs are chlamydia, gonorrhea, trichomoniasis, and syphilis.
- \_\_\_\_\_ 8. Using condoms can prevent acquiring a STI.
- \_\_\_\_\_ 9. Chlamydia is the most common STI in the United States.
- \_\_\_\_\_ 10. Many more young women get chlamydia than young men.
- \_\_\_\_\_ 11. The human papilloma virus can cause cancer of the uterus in females.
- \_\_\_\_\_ 12. A PAP test can detect cervical cancer.

## Lesson 25.4: Critical Reading

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Read these passages from the text and answer the questions that follow.*

### Understanding Sexually Transmitted Infections

To be considered a sexually transmitted infection (STI), an infection must have only a small chance of spreading naturally in ways other than sexual contact. Some infections that can spread through sexual contact, such as the common cold, spread more commonly by other means. These infections are not considered STIs.

### Pathogens that Cause STIs

STIs may be caused by several different types of pathogens, including protozoa, insects, bacteria, and viruses. For example: Protozoa cause an STI called **trichomoniasis**. The pathogen infects the vagina in females and the urethra in males, causing symptoms such as burning and itching. Trichomoniasis is common in young people. Pubic lice are insect parasites that are transmitted sexually. They suck the blood of their host and irritate the skin in the pubic area.

Most STIs are caused by bacteria or viruses. Several of them are described below. Bacterial STIs can be cured with antibiotics. Viral STIs cannot be cured. Once you are infected with a viral STI, you are likely to be infected for life.

### How STIs Spread

Most of the pathogens that cause STIs enter the body through mucous membranes of the reproductive organs. All sexual behaviors that involve contact between mucous membranes put a person at risk for infection. This includes vaginal, anal, and oral sexual behaviors. Many STIs can also be transmitted through body fluids such as blood, semen, and breast milk. Therefore, behaviors such as sharing injection or tattoo needles are another way these STIs can spread. Why are STIs common in young people? One reason is that young people often take risks. They may think, “It can’t happen to me.” They also may not know how STIs are spread, so they don’t know how to protect themselves. In addition, young people may have multiple sexual partners.

### Preventing STIs

The only completely effective way to prevent infection with STIs is to avoid sexual contact and other risky behaviors. Using condoms can lower the risk of becoming infected with STIs during some types of sexual activity. However, condoms are not foolproof. Pathogens may be present on areas of the body not covered by condoms. Condoms can also break or be used incorrectly.

### Questions

1. What is a sexually transmitted infection? What causes most STIs?
  
  
  
  
  
  
  
  
  
  
2. Describe trichomoniasis.
  
  
  
  
  
  
  
  
  
  
3. How are pathogens that cause STIs transmitted?

4. What are two ways to prevent STIs? What is the main difference between the two methods discussed in the text?

## Lesson 25.4: Multiple Choice

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Circle the letter of the correct choice.*

1. A 2008 study had found that one in \_\_\_\_\_ teen girls in the U.S. had a sexually transmitted infection.
  - (a) two
  - (b) four
  - (c) ten
  - (d) twenty
2. Pubic lice
  - (a) are insect parasites that are transmitted sexually.
  - (b) irritate the skin in the pubic area.
  - (c) suck the blood of their host.
  - (d) all of the above
3. Most of the pathogens that cause STIs enter the body through
  - (a) any mucous membrane.
  - (b) the mouth.
  - (c) mucous membranes of the reproductive organs.
  - (d) body fluids such as blood, semen, and breast milk.
4. Bacterial STIs include
  - (a) genital herpes, gonorrhea, and syphilis.
  - (b) chlamydia, gonorrhea, and syphilis.
  - (c) hepatitis B and genital herpes.
  - (d) chlamydia, hepatitis B, and genital warts.
5. Infection with HPV
  - (a) can be prevented with a vaccine.
  - (b) can cause hepatitis B.
  - (c) is very common in young men.
  - (d) all of the above
6. Syphilis
  - (a) can cause serious damage to the heart, brain, and other organs.
  - (b) causes small sores on or near the genitals.
  - (c) if untreated, may eventually lead to death.
  - (d) all of the above
7. The most likely population to get chlamydia is
  - (a) 20 - 24 year old females.
  - (b) 20 - 24 year old males.
  - (c) 15 - 19 year old females.
  - (d) 25 - 29 year old females.

## Lesson 25.4: Vocabulary I

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Match the vocabulary word with the proper definition.*

### Definitions

- \_\_\_\_\_ 1. inflammation of the liver
- \_\_\_\_\_ 2. symptoms include painful blisters on the genitals
- \_\_\_\_\_ 3. small, rough growths on the genitals
- \_\_\_\_\_ 4. includes protozoa, insects, bacteria, and viruses
- \_\_\_\_\_ 5. caused by protozoa
- \_\_\_\_\_ 6. the most common STI in the United States
- \_\_\_\_\_ 7. STI whose symptoms include painful urination and discharge from the vagina or penis
- \_\_\_\_\_ 8. STI that can cause serious damage to the heart and brain
- \_\_\_\_\_ 9. may cause genital warts
- \_\_\_\_\_ 10. an infection caused by a pathogen that spreads mainly through sexual contact

### Terms

- a. chlamydia
- b. genital herpes
- c. genital warts
- d. gonorrhea
- e. hepatitis B
- f. human papilloma virus
- g. pathogens
- h. sexually transmitted infection
- i. syphilis
- j. trichomoniasis

## Lesson 25.4: Vocabulary II

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Fill in the blank with the appropriate term.*

1. A sexually transmitted infection is an infection caused by a pathogen that spreads mainly through \_\_\_\_\_ contact.
2. Worldwide, a \_\_\_\_\_ people a day become infected with STIs.
3. STIs may be caused by several different types of \_\_\_\_\_ , including protozoa, insects, bacteria, and viruses.
4. Bacterial STIs can be cured with \_\_\_\_\_ .
5. Viral STIs \_\_\_\_\_ be cured.
6. Most of the pathogens that cause STIs enter the body through \_\_\_\_\_ membranes of the reproductive organs.
7. Many STIs can also be transmitted through \_\_\_\_\_ such as blood, semen, and breast milk.
8. Some of the most common bacterial STIs are chlamydia, \_\_\_\_\_ , and syphilis.
9. \_\_\_\_\_ is the most common STI in the United States.
10. The human papillomavirus may cause \_\_\_\_\_ of the cervix in females.

## Lesson 25.4: Critical Writing

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

*Thoroughly answer the question below. Use appropriate academic vocabulary and clear and complete sentences.*

Explain what causes STIs and how they can be prevented.