

Revised January 2017



Reproductive Anatomy, Conception, Pregnancy, and Birth

Lesson Goals

Explain the Structure and Function of the Male and Female Reproduction Systems
Review Proper Vocabulary for the Male and Female Reproductive Systems
Review the Process of Human Reproduction from Conception to Birth

SEL Goals

Self-awareness, self-management, social awareness

Terms Used

Reproduction
Vaginal Intercourse
Fertilization
Sperm
Egg
Pregnancy

Materials: Folders, Journals. *Who's Got What?* handout, *Male Anatomy* handout, *Female Anatomy* handout, *Fertilization: A Fill-in-the-Blank Story* handout, DVD - Life's Greatest Miracle - NOVA.

FILL IN

Activity 3 - Review.....The Parts and What they Do

~ The purpose is to review the parts and function of the male and female reproductive systems.

Distribute the Male Anatomy and Female Anatomy vocabulary terms and worksheets. Ask students to use the word bank to fill in the blank matching the appropriate descriptor. Review with students once complete.

Extension: Challenge students to match the terms to the appropriate anatomical body part on the diagrams. Review both structure and function with students once complete.

Remind students that the brain is the most important part of both the male and the female reproductive systems. The brain is the part of the body that controls when puberty begins and ends for each individual, and it is also responsible for causing people to have sexual feelings and dreams.

Male Reproductive System Word Bank

Erection

Vas deferens

Testes (singular: **testicle**)

Scrotum

Foreskin

Urethra

Seminal vesicles

Epididymis

Prostate gland

Penis

Cowper's glands

Female Reproductive System Word Bank

Vulva

Vagina

Fallopian tubes

Hymen

Hymen

Clitoris

Uterus

Cervix

Urethra

Ovaries

Labia

Fimbria

Male Reproductive System

_____ A skin sac that holds the testes outside the body.

_____ Organs that produce sperm and the male sex hormone, testosterone.

_____ The coiled tubes behind the testicles where sperm mature and are stored.

_____ Glands on each of the vas deferens that produce fluids that mix with the sperm to make semen.

_____ A gland under the bladder that contains pleasure sensors and produces fluids that mix with sperm to make semen.

_____ Glands on either side of the urethra that make a fluid that lines the urethra when a man gets an erection, before ejaculation (pre-ejaculate). This fluid acts as a lubricant for the sperm during ejaculation.

_____ Tubes that carry sperm from the testes to the urethra.

_____ A tube that can carry sperm and urine out of the body.

_____ An organ made of soft, spongy tissue and blood vessels, used for reproduction, urination, and pleasure. When the penis becomes erect, or "hard," it becomes filled with blood. This is called an erection.

_____ A loose skin that covers the head of the penis; all males are born with it.

_____ are a normal part of being male. They may occur because of certain thoughts or feelings, they may be caused by a stimulus, or they may happen for seemingly no reason at all. This is because even when a person is not consciously aware of it, the brain is always in control of a person's anatomy - including their reproductive system.

Female Reproductive System

_____ Organs that contain ova (singular: ovum) and produce hormones, (estrogen, progesterone) that cause body changes, ovulation, and menstruation. Ova are often referred to as egg cells.

_____ Small tubes that carry the egg from the ovaries to the uterus. This is where sperm will join with or fertilize an egg, which is the first step necessary for pregnancy to happen.

_____ The finger-like parts on the end of each fallopian tube; they find an egg after it is released from the ovary and sweep it into the tube.

_____ The pear-shaped, muscular reproductive organ from which women menstruate and where a pregnancy develops.

_____ Part of the uterus that includes the opening between the uterus and the vagina.

_____ A passage that connects the uterus and the outside of the body. It serves as the birth canal and a passageway for menstrual fluids to leave the body. It is also used for pleasure.

_____ A thin piece of skin that may partially cover the opening of the vagina. Many women are born with no visible hymen. The hymen is a thin membrane that may cover the opening to the vagina. It can disintegrate over time. It is normal for a girl to have a noticeable hymen, and it is also normal if a girl does not have a noticeable hymen.

_____ A small mound of skin containing many nerve cells; it is very sensitive to the touch. It is located between the labia at the top of the vulva.

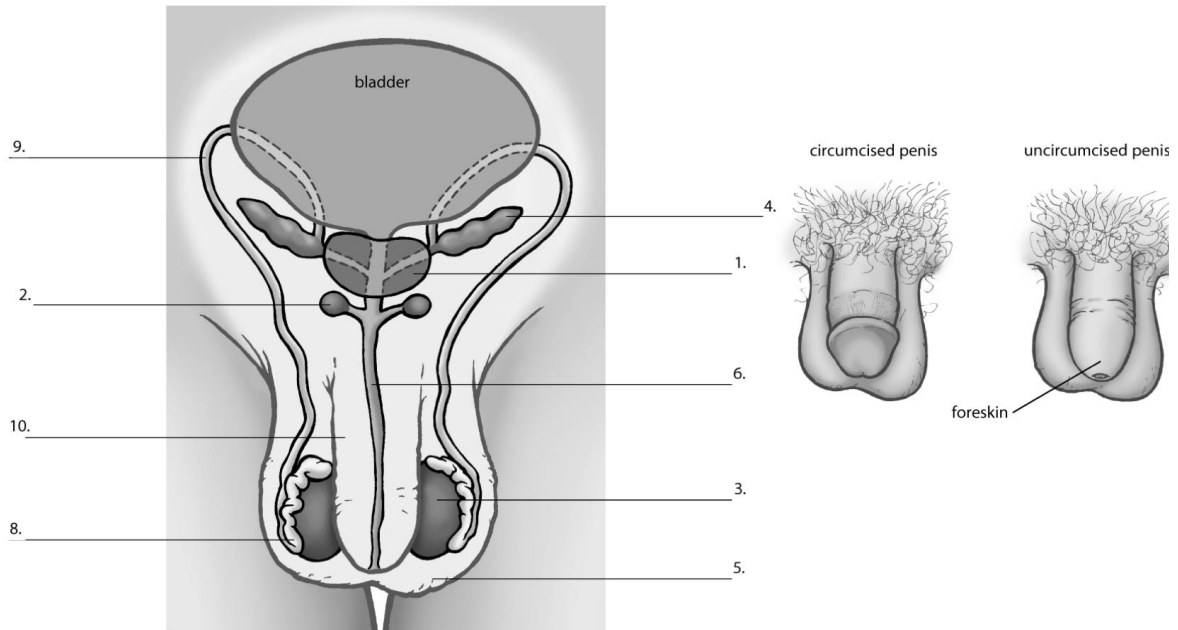
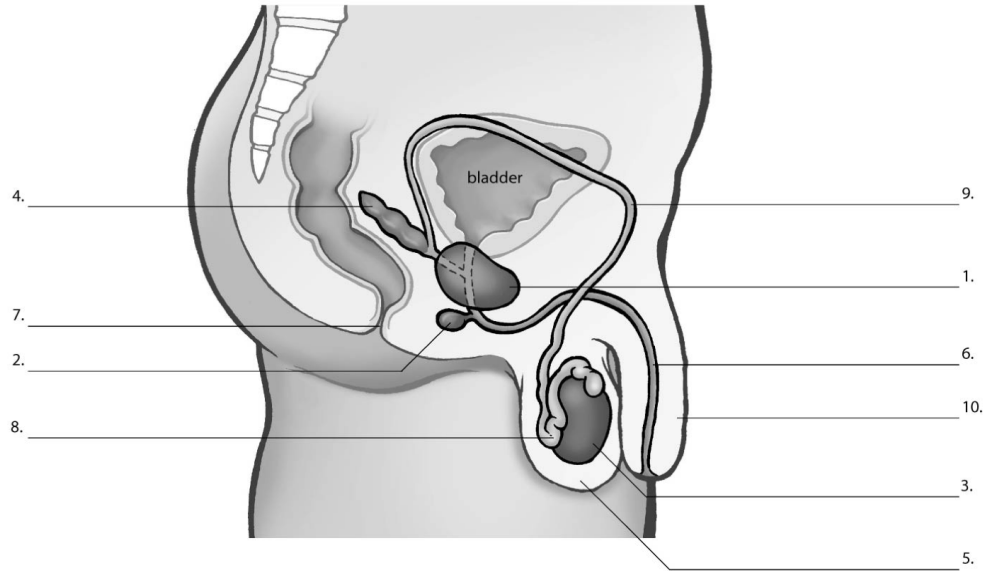
_____ The tube that carries urine out of the body.

_____ A woman's external sex organs, including the clitoris, urethra, both sets of labia, and the opening to the vagina.

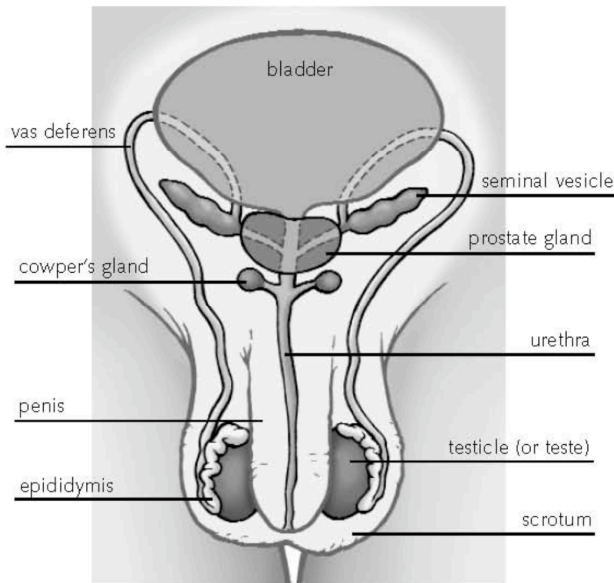
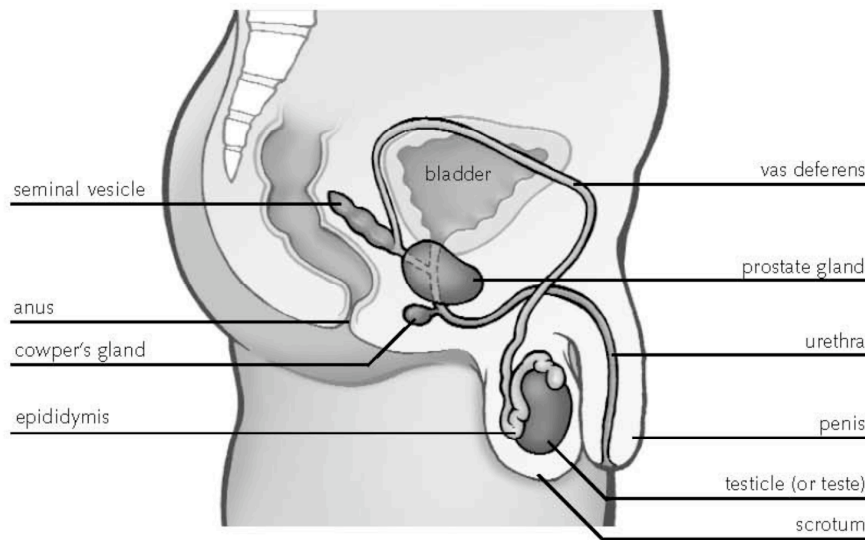
_____ The outer and inner labia (also called "lips") are two folds of fleshy tissue on the outermost parts of the vulva. The outer lips are closer to the legs. Pubic hair grows there on most women. The inner lips protect the inner vulva and do not have pubic hair.

Sexual/Reproductive Anatomy

MALE

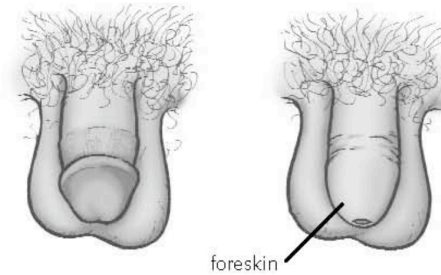


Male Reproductive System Answer Key



circumcised penis

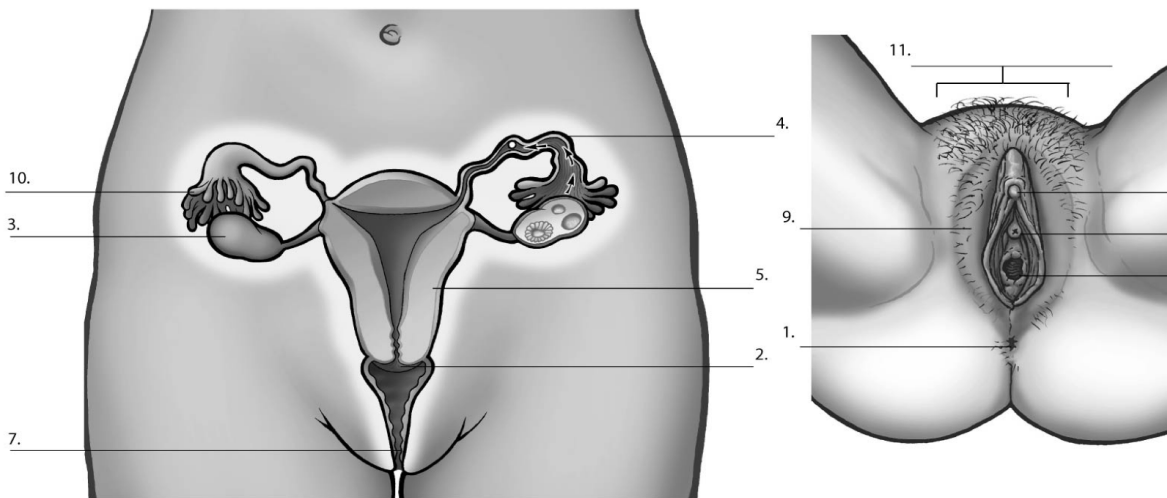
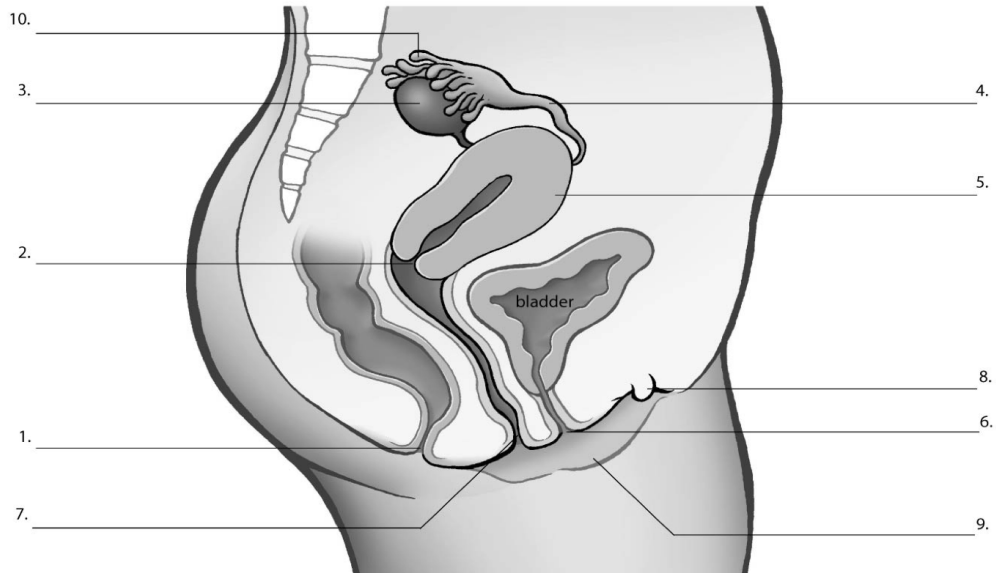
uncircumcised penis



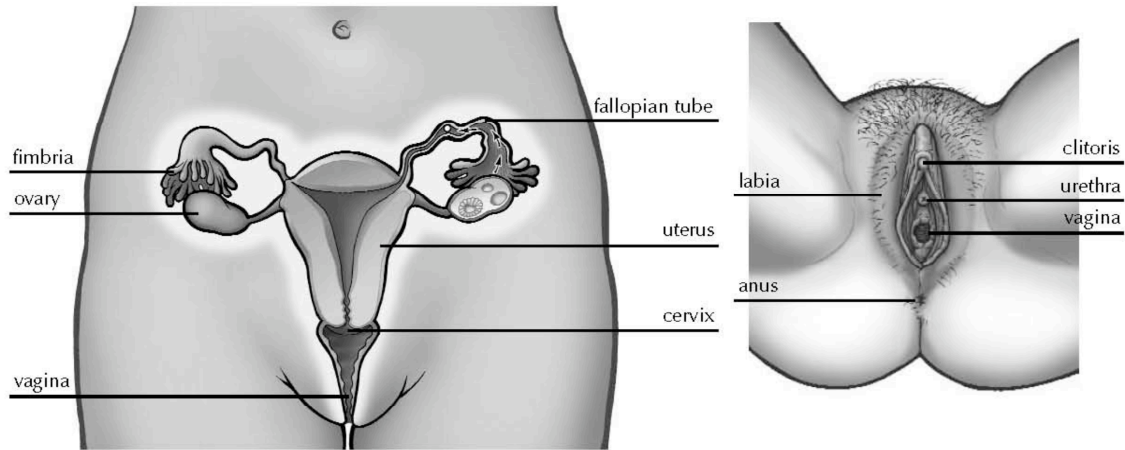
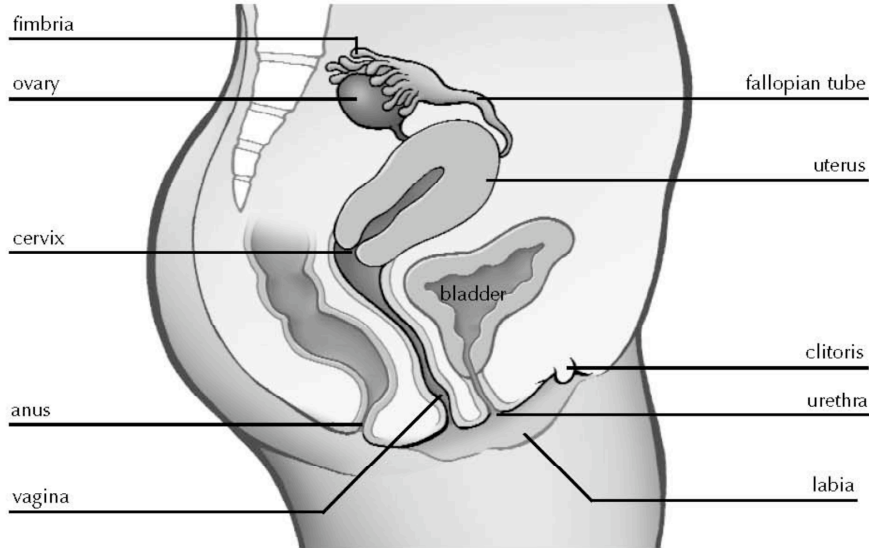
These drawings are an example of sexual/reproductive parts. People's bodies come in all different shapes, sizes, and colors. For more information, contact Planned Parenthood at 1-800-258-4448, or visit our website at <http://www.getrealeducation.org>. Images © 2010 Planned Parenthood League of Massachusetts.

Sexual/Reproductive Anatomy

FEMALE



Female Reproductive System Answer Key



These drawings are an example of sexual/reproductive parts. People's bodies come in all different shapes, sizes, and colors. For more information, contact Planned Parenthood at 1-800-258-4448, or visit our website at <http://www.getrealeducation.org>. Images © 2010 Planned Parenthood League of Massachusetts.

Activity 4 DVD - NOVA: The Miracle of Life

See PBS-NOVA: Life's Greatest Miracle Movie Worksheet - (20 points) on following pages - Can be used with Video

~ The purpose of this activity is to review the process of human reproduction from conception to birth. The characters in this DVD are a young married couple planning for the birth of their first child.

Can be viewed using our DVD, or can be viewed online at:

<http://www.pbs.org/wgbh/nova/miracle/program.html>

This hour-long program is divided into eight chapters. At the end of each chapter stop and check in with students to check their understanding and allow them to ask questions. Then set the context for the following chapter.

[Choose a chapter and select QuickTime or Real Video to begin viewing. If you experience difficulty viewing on-line, it may be due to high demand and you will have to resort to the DVD.]

1. Passing on Your DNA (running time 09:53)

- states that human bodies are designed to make babies.
- points out that human bodies are made up of about 100 trillion cells and composed of tissues and organs.
- notes that sexual reproduction allows two individuals to provide DNA to create new beings that are different from their parents.

2. The Egg's Journey (running time 06:00)

- introduces a man and a woman expecting a baby.
- states that men produce sperm from puberty on, but all of a female's eggs are made when a fetus.
- explains ovulation
- notes that an egg has all components to start life except DNA from sperm, and a few hours after being released, the egg will die if it does not join with a sperm
- discusses human sexual chemistry and the physical aspects of it.

3. The Sperm's Journey (running time 05:41)

- states that the acidic nature of the vagina kills sperm that don't travel quickly enough through it.
- tells that even in healthy men, up to about 60 percent of the sperm are imperfect.
- explains that woman's body controls whether, or not a healthy sperm reaches an egg and successfully fertilizes it.
- states what happens to the cervix during ovulation, describes the sperms' journey into a fallopian tube, and notes how sperm fertilizes the egg.

4. The First Two Weeks (*running time 04:58*)

- states that sperm and egg join to create a viable embryo, but more than 50 percent of all fertilized eggs don't develop.
- explains that after the sperm enters the egg, meiosis is completed.
- discusses the process of how the cells, now called a blastocyst, move toward and attach to the mother's uterine lining

5. The Embryo Takes Shape (*running time 07:47*)

- explains that when the blastocyst is the size of a poppy seed, cells organize into an embryo.
- discusses gastrulation, a process in which three different layers of cells develop, and different organs develop from each layer.
- tells that at four and one-half weeks, the embryo is about 1/5 in. long.
- summarizes that all organs develop from the same cell with 46 chromosomes, but cells in different organs do not look alike because different genes are activated in different cell types causing different proteins to be made.

6. Messages in the Genes (*running time 04:35*)

- notes that one pair of chromosomes among 23 determine the sex—XX for female and XY for male.
- explains that late in the sixth week, a chain of chemical reactions occur turning on some genes and off others.
- presents how the journey becomes a fetus.
- tells that at six months, the fetus is 400 times larger than at two months.

7. Feeding the Growing Fetus (*running time 06:39*)

- explains that in a growing fetus a few crucial events are still occurring, including fat being laid down in the brain.
- describes the role of the placenta.
- outlines how different body organs develop.

8. The Third Trimester (*running time 07:07*)

- notes that by the third trimester, all organ systems are in place.
- describes how fat is laid down in the brain, and how a fatty covering called myelin surrounds nerve cells.
- explains the brain's need for nourishment during the final trimester.
- shows the birth of the developed fetus, and explains how dangerous human births were, particularly before C-sections were possible.

9. When does a human female produce her eggs?

10. What danger confronts sperm in the vagina?

11. What does the sperm need in order to be allowed through the egg's zona?

12. How much time passes between fertilization and the first division of the zygote?

13. After fertilization, how long does it take for the blastocyst to arrive in the uterus?

14. What risk does the blastocyst face after it attaches to the uterus?

15. *True or False:* All cells have the same genes.

16. What does a gene do when it has been turned on?

17. Where specifically does the baby get its nutrients from?

18. Does the blood of the mother and the baby ever mix?

19. How old is the fetus when it gains the ability to hear sound?

20. What is the main job of the fetus during the last trimester?

Activity 5 - Fertilization Fill-in-the-Blanks Story (10 minutes)

~ The purpose of this activity is to give students an opportunity to review their knowledge about the pathway of the sperm to the egg during vaginal intercourse.

Tell students they will be writing about the path of the sperm from the testes to the point of fertilization. They will do this by completing the Fertilization: Fill-in-the-Blank handout.

When they have completed their worksheets, select at least one story to read out loud. Ensure that all the answers are correct.

Activity 6 - Anonymous Questions

~The purpose of the anonymous question box is to provide students with a way to ask those questions that they might feel uncomfortable asking out loud in class.

Address students questions in Anonymous Question Box. Give students a new question to answer if they don't have one about the class material, and remind students to place their anonymous questions in the box as they leave the classroom.

Name: _____

FERTILIZATION: A FILL-IN-THE-BLANKS STORY

(Handout 9.A-4)

Instructions: Use the words on the following page to complete the story. Make sure to use the correct parts of the male and female anatomy in the appropriate blanks.

Scooter, a(n) _____ (adjective) _____ (male sex cell), was _____ (verb ending in -ing) around in the _____ (part of the man's body that produces testosterone) when he received a(n) _____ (adjective) message from the brain: "Arousal alert! Arousal alert! We have an erection!" The message blared _____ (adverb). Scooter, along with _____ (the number of sperm in the average ejaculation) sperm, prepared _____ (adverb) and moved into the _____ (part of the man's body where sperm are held before an ejaculation). Scooter's tail flipped _____ (adverb) as he made his way up the _____ (the tube sperm travel after leaving the testes) and past the _____ (glands that make fluids that combine with sperm and become semen). From there he passed through the _____ (the part that makes it impossible for a man to urinate and ejaculate simultaneously), down the _____ (the tube that runs through the penis), and out the tip of the _____ (the part that's made up of spongy tissue, blood vessels, and nerves). Suddenly he was in a(n) _____ (adjective) world he'd never seen before. "OMG!" he exclaimed as he and the other sperm made their way through the _____ (the opening of the female reproductive system out of which a woman would give birth), through the _____ (the part of the uterus that contains the opening to the vagina), and into the _____ (the muscle where a fetus would develop during a pregnancy).

Meanwhile, Olive, an _____ (female sex cell), who had been released during the _____ (adjective) process of _____ (the process in which an egg is released) by the _____ (female gland where eggs are stored), began _____ (verb ending in -ing) in the _____ (small tubes connected to the uterus). Scooter's

Fertilization: A Fill-In-The-Blanks Story (continued)

_____ (adjective) sperm tail kicked into overdrive when he saw Olive, the most _____ (adjective) egg in the _____ (a place). Scooter swam _____ (adverb) toward Olive. As soon as they joined, their cells began to combine, causing fertilization. The now-fertilized Olive implanted in the lining of the uterus, creating a pregnancy.

Use the following words to complete the story.

Body Parts and Functions	cervix	fallopian tubes	urethra
	sperm	vas deferens	ovary
	penis	vagina	testes
	uterus	seminal vesicles	ovum/egg
	ovulation	prostate gland	epididymis
Adjectives	chilly	fancy	mysterious
	silly	amazing	vast
	massive	mushy	sparkling
	victorious	happy	great
Adverbs	awkwardly	triumphantly	oddly
	courageously	smoothly	nervously
	dreamily	intensely	lovingly
	majestically	gracefully	carefully
Verbs ending in "ing"	moving	working	laughing
	chilling	waiting	swimming
Places	neighborhood	universe	world
Numbers	300-500	400 thousand	300-500 million

Fertilization: a Fill-in-the-Blanks Story—Answer Key for Teachers

Scooter, a(n) _____(adjective) **SPERM** (male sex cell), was _____(verb ending in -ing) around in the **TESTES** (part of the man's body that produces testosterone) when he received a(n) _____(adjective) message from the brain: "Arousal alert! Arousal alert! We have an erection!" The message blared _____(adverb). Scooter, along with **300–500 MILLION** (the number of sperm in the average ejaculation) sperm, prepared _____(adverb) and moved into the **EPIDIDYMIS**(part of the man's body where sperm are held before an ejaculation). Scooter's tail flipped _____(adverb) as he made his way up the **VAS DEFERENS** (the tube sperm travel after leaving the testes) and past the **SEMINAL VESICLES** (glands that make fluids that combine with sperm and become semen). From there he passed through the **PROSTATE GLAND** (the part that makes it impossible for a man to urinate and ejaculate simultaneously), down the **URETHRA** (the tube that runs through the penis), and out the tip of the **PENIS** (the part that's made up of spongy tissue, blood vessels, and nerves). Suddenly he was in a(n) _____(adjective) world he'd never seen before. "OMG!," he exclaimed as he and the other sperm made their way through the **VAGINA** (the opening of the female reproductive system out of which a woman would give birth), through the **CERVIX**(the part of the uterus that contains the opening to the vagina), and into the **UTERUS** (the muscle where a fetus would develop during a pregnancy).

Meanwhile, Olive, an **OVUM/EGG** (female sex cell), who had been released during the _____(adjective) process of **OVULATION** (the process in which an egg is released) by the **OVARY**(female gland where eggs are stored), began _____(verb ending in -ing) in the **FALLOPIAN TUBES** (small tubes connected to the uterus). Scooter's _____(adjective) sperm tail kicked into overdrive when he saw Olive, the most _____(adjective) egg in the _____(a place). Scooter swam _____(adverb) toward Olive. As soon as they joined, their cells began to combine, causing fertilization. The now-fertilized Olive implanted in the lining of the uterus, creating a pregnancy.

Teacher's Notes: