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

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**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Erection</td>
<td></td>
</tr>
<tr>
<td><strong>Testes</strong> (singular: <em>testicle</em>)</td>
<td>Scrotum</td>
</tr>
<tr>
<td>Foreskin</td>
<td>Urethra</td>
</tr>
<tr>
<td>Seminal vesicles</td>
<td>Epididymis</td>
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<tr>
<td>Prostate gland</td>
<td>Penis</td>
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<tr>
<td>Cowper’s glands</td>
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</tbody>
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**Female Reproductive System Word Bank**

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vulva</td>
<td>Vagina</td>
</tr>
<tr>
<td>Fallopian tubes</td>
<td>Hymen</td>
</tr>
<tr>
<td>Hymen</td>
<td>Clitoris</td>
</tr>
<tr>
<td>Uterus</td>
<td>Cervix</td>
</tr>
<tr>
<td>Urethra</td>
<td>Ovaries</td>
</tr>
<tr>
<td>Labia</td>
<td>Fimbria</td>
</tr>
</tbody>
</table>
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

1. Bladder
2. Urethra
3. Prostate
4. Seminal vesicles
5. Rectum
6. Pelvic muscles
7. Testicles
8. Scrotum
9. Penis
10. Scrotal sac

circumcised penis

uncircumcised penis

foreskin
Male 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.
Sexual/Reproductive Anatomy

FEMALE

1. 
2. 
3. 
4. 
5. 
6. 
7. 
8. 
9. 
10. 
11.
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.getrealineducation.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.
PBS-NOVA: Life’s Greatest Miracle Movie Worksheet - 20 points

Please follow along with the video and answer the following questions.

1. How many human babies are born each day? ________________

2. What is DNA “very good” at?

3. What risk is there for a species that only reproduces by cloning?

4. How does the DNA of sexually produced offspring compared to the DNA of the parents?

5. How many sperm are produced by the average human male ________________

6. What process is used to make sperm cells and egg cells? ________________

7. What happens to the genes when two chromosomes “embrace”?

8. What is the advantage of diversity within a species?
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.

<table>
<thead>
<tr>
<th>Body Parts and Functions</th>
<th>cervix</th>
<th>fallopian tubes</th>
<th>urethra</th>
</tr>
</thead>
<tbody>
<tr>
<td>sperm</td>
<td></td>
<td>vas deferens</td>
<td>ovary</td>
</tr>
<tr>
<td>penis</td>
<td></td>
<td>vagina</td>
<td>testes</td>
</tr>
<tr>
<td>uterus</td>
<td></td>
<td>seminal vesicles</td>
<td>ovum/egg</td>
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<td>ovulation</td>
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<td>prostate gland</td>
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<table>
<thead>
<tr>
<th>Adjectives</th>
<th>chilly</th>
<th>fancy</th>
<th>mysterious</th>
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<tbody>
<tr>
<td>silly</td>
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<td>amazing</td>
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<td>mushy</td>
<td>sparkling</td>
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<table>
<thead>
<tr>
<th>Adverbs</th>
<th>awkwardly</th>
<th>triumphantly</th>
<th>oddly</th>
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<tbody>
<tr>
<td>courageously</td>
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<td>smoothly</td>
<td>nervously</td>
</tr>
<tr>
<td>dreamily</td>
<td></td>
<td>intensely</td>
<td>lovingly</td>
</tr>
<tr>
<td>majestically</td>
<td></td>
<td>gracefully</td>
<td>carefully</td>
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<table>
<thead>
<tr>
<th>Verbs ending in “ing”</th>
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<th>working</th>
<th>laughing</th>
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</thead>
<tbody>
<tr>
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<td></td>
<td>waiting</td>
<td>swimming</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Places</th>
<th>neighborhood</th>
<th>universe</th>
<th>world</th>
</tr>
</thead>
</table>

| 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).

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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.
Reflective Journaling Activity

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