

Grade 6 Science
Week of October 13 – October 16

Reproduction

Introduction

All living things have the ability to reproduce offspring—this is how a species survives. **Reproduction** — the process by which organisms make more organisms like themselves — is one of the things that sets living organisms apart from nonliving matter. However, even though the reproductive system is essential to keeping a **species alive**, unlike other body systems, it's not essential to keeping an **individual alive**.

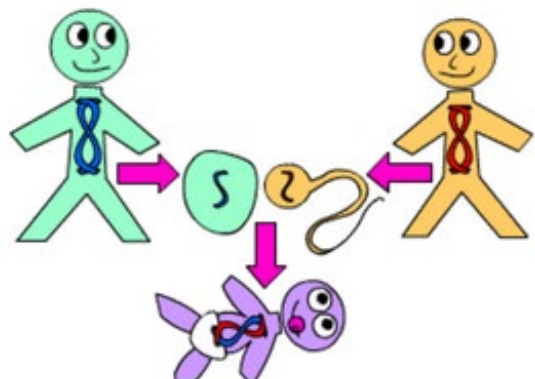
Males and females have different reproductive systems. In this section, you will learn about both systems and how they can work together to reproduce.



Human Traits

Humans, like other organisms, pass certain characteristics of themselves to the next generation through their **genes**, the special carriers of human traits.

Organisms that reproduce sexually contribute half of their genetic information from one parent and half from the other parent. The genes parents pass along to their children are what make children similar to others in their family, but they are also what makes each child unique. These genes come from the **father's sperm** and the **mother's egg**, which are produced in the male and female reproductive systems. In this unit, you will learn about the structures found in the male and female reproductive systems and their functions.



Key Terms

Here are some key terms that you will encounter throughout this unit:

Term	Meaning
Gamete	A reproductive (sex) cell. In males, sperm; in females, eggs
Puberty	Process during which adolescents reach sexual and reproductive maturity
Testes	The male reproductive gland that produces sperm and male hormones
Ovaries	The female reproductive gland that produces eggs and female hormones
Menstrual cycle	The pattern of events in females involving the development and release of an egg
Fertilization	The process in sexual reproduction in which a male gamete and female gamete fuse/join to form a new cell

Complete the following:

True or False: If a statement is false, change it so that it is

1) Genes are what make a child's similar to their family but also what makes them unique.

2) Genes come from a mother's egg and a father's sperm.

Complete the table.

Term	Meaning
Gamete	A reproductive (sex) cell. In males, _____; in females, _____
	Process during which adolescents reach sexual and reproductive maturity.
Testes	
Ovaries	
Menstrual Cycle	The pattern of events in _____ involving the _____ and _____ of an egg.
	The process in sexual reproduction in which a male gamete and female gamete fuse/join to form a new cell.

The Male Reproductive System

Most species have biological **two sexes**: male and female. Each sex has its own unique reproductive system. They are different in shape and structure, but both are specifically designed to produce, nourish, and transport either the egg or sperm.

Unlike the female, whose sex organs are located **entirely within** the pelvis, the male has reproductive organs, or genitals, that are both **inside and outside** the pelvis.



Watch this video for a quick overview of the male anatomy: <https://youtu.be/G2ciOhidKpg>

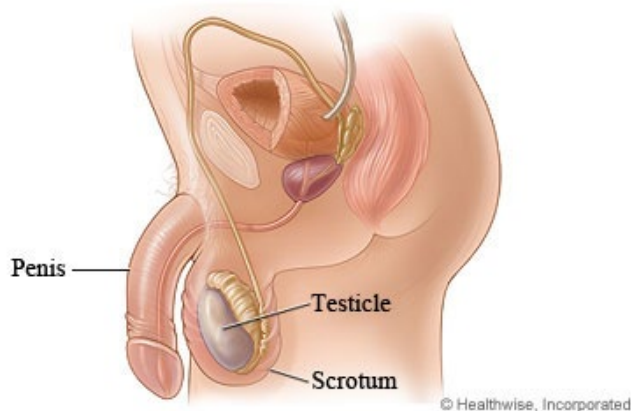
Video: Biological Male Anatomy

Watch the video “Biological Male Anatomy” to answer the following questions:

- 1) How many testicles does a biological male have? _____
 - 2) Does a penis have bones in it? _____
 - 3) What is the hole at the tip of the penis? _____
 - 4) Can a person pass urine and semen at the same time? _____
 - 5) What is pre-ejaculate fluid for?
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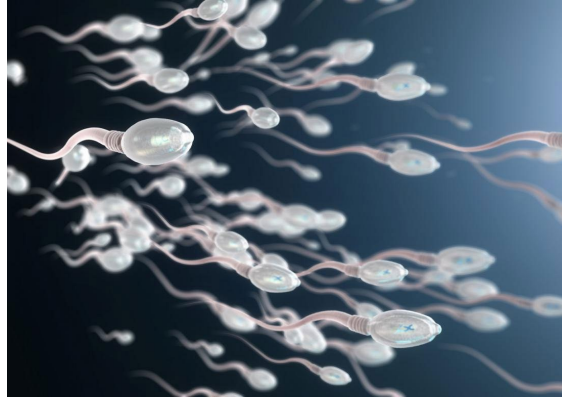
Penis, Testes, Scrotum

Males have two sex organs on the outside of their body, the **testes** (typically 2, also known as testicles), and the **penis**. A male's testes are protected in a skin sack called the **scrotum**.



In a male who has reached sexual maturity, the testes produce and store millions of tiny **sperm cells** (male gamete, a special kind of cell). As you know, the testes are also part of the **endocrine system** because they produce hormones, including **testosterone**. Once puberty is reached testosterone also stimulates the production of sperm.

A male who has reached puberty will produce **millions** of sperm cells **every day**. Sperm develops in the testicles extremely small: only 0.05 millimeters long.

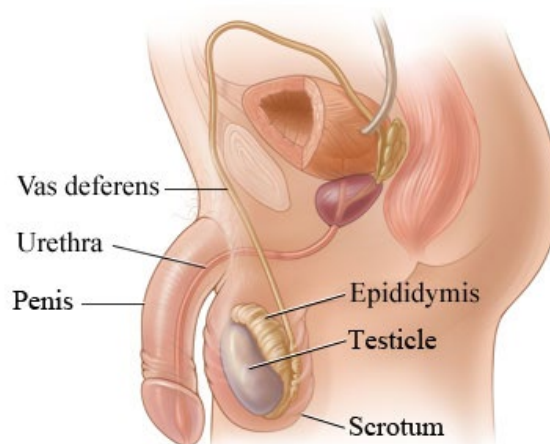


Epididymis, Vas deferens, and Urethra

Now you know that a male's testes (or testicles) are where sperm is made. But once it's made, it has to be stored somewhere until it's time for it to be released from the body. This is the job of the **epididymis**; to store the sperm that is created by the testes. The epididymis is protected in the scrotum with the testes.

From the epididymis, the sperm is moved through a tube called the **vas deferens** which brings it to the ejaculatory duct. While the sperm is traveling through the vas deferens, it is mixed with some other liquids that are produced by glands in the reproductive system and becomes a fluid called **semen**.

When a male is ready to **ejaculate** (release semen from the body) is released through the **urethra**. You've heard of the urethra when you learned about the excretory system because it's the tube that transports urine out of the body. But the urethra also transports semen out, however, it can only transport one fluid at one time. Meaning that if a male is ejaculating, urine cannot be released at the same time.



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Complete the following:

1. What is the name of the skin sac that protects the testes?

2. A male gamete is called a _____

3. How many sperm does a biological male produce each day?

4. What does the epididymis do?

5. Where is sperm mixed with other fluids to create semen?

6. The journey of sperm: Correctly order the journey of sperm from creation, to ejaculation.

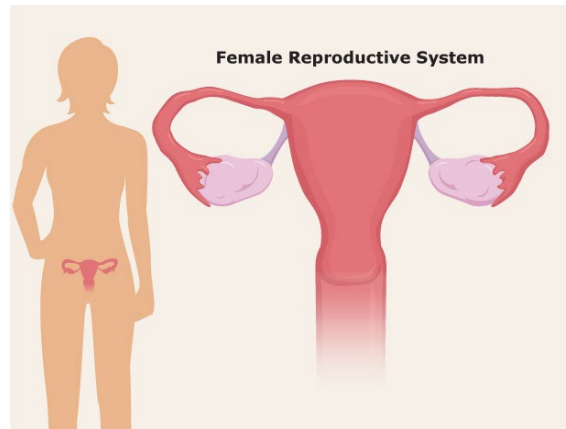
Word Bank

- Epididymis
- Urethra
- Testes
- Vas deferens



The Female Reproductive System

Unlike a male's reproductive system, a female's reproductive system is only on the inside of the body. All of the organs in this system can be found in the **pelvic** region, which is around the lower belly. Let's learn about these organs.

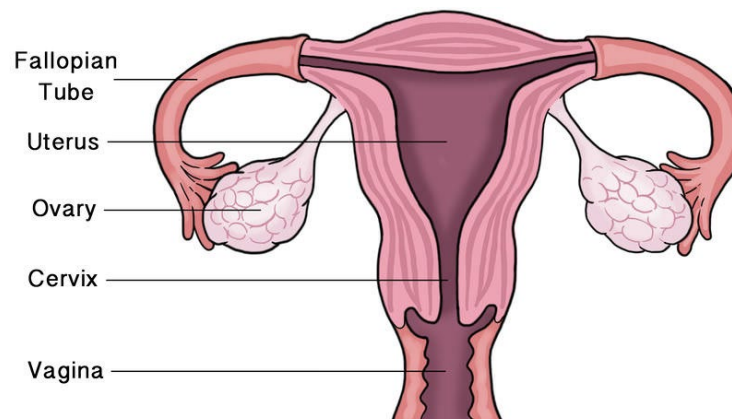


The **vagina** is a tube that connects the uterus to the outside of the body. The entrance to the vagina is on the outside of the body. It's called the **vaginal opening**. The vagina is muscular, which means it can contract and relax. This is important when it comes to childbirth because the vagina must expand in order to allow the baby to come out. The vagina connects to the uterus through the **cervix** (which is just the lower part of the uterus, narrower than the rest of the uterus)

The **uterus** (also known as the womb) is shaped like an upside-down pear, with a thick lining and muscular walls. Did you know that the uterus contains some of the strongest muscles in the female body? These muscles are able to expand and contract to accommodate a growing fetus (baby) and then help push the baby out during labor.

A female has 2 **fallopian tubes**, one on each side of the uterus. Fallopian tubes go from the uterus to the ovaries. During **ovulation**, an ovary releases an egg into the fallopian tube that connects it to the uterus.

There are two **ovaries**, one on either side of the uterus. Ovaries make eggs and hormones like estrogen. The ovaries release an egg as part of a woman's cycle. When an egg is released, it's called **ovulation**. Each egg is tiny about one-tenth the size of a poppy seed. That's really tiny!



Complete the following:

1. What region of the body can all of the female reproductive organs be found in?

2. What connects the uterus to the outside of the body?

3. What is the uterus also known as? _____

4. Fill in the blanks: Fallopian tubes go from the _____ to the _____

5. What happens during ovulation?

6. What is it called when an egg is released?

Menstruation

Menstruation occurs when a biological female goes through puberty, it is also known as getting a period. This is the body's way of preparing for reproduction in the future.



Check out this video to see how a female's menstrual cycle works, and why it occurs:

https://youtu.be/vXrQ_FhZmos

Video: The Menstrual Cycle

Watch the video "The Menstrual Cycle" to answer the following questions:

1) Where does a baby grow when a woman is pregnant?

2) How long can a period last?

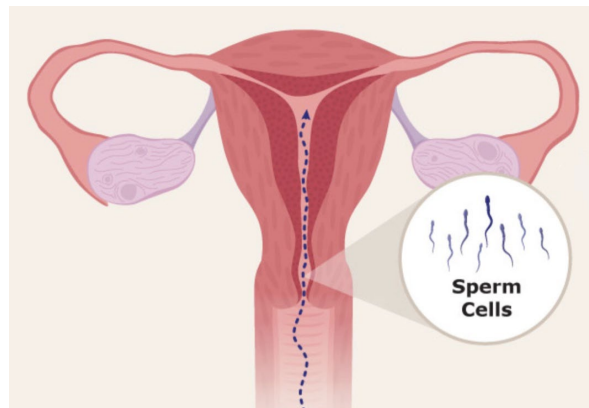
3) What's a menstrual cycle?

4) What lead from each ovary to the uterus?

5) Will a woman who is pregnant have her period? _____

Offspring

Offspring is just a fancy word for babies. So how exactly does a female body begin to grow a baby? While the female reproductive system does most of the work, the male reproductive system is needed in order to **fertilize** a female's egg. Without fertilization, a baby would not be able to form.



If a male ejaculates into a female's vagina during unprotected sex, **sperm cells** travel through the **vagina** to the **uterus** then up the **fallopian tubes** in search of an **egg**. If successful, the sperm will meet the egg that was released from the ovary during **ovulation**. What is ovulation? Simply put, this is when an egg is released during menstruation.



If a sperm cell fertilizes the woman's egg, it's the first step in reproduction (getting pregnant), and if all goes well, in 9 months, a baby will be born!



So how does a baby survive in the mother's womb all that time? Check out this video to see how your belly button was your lifeline as a fetus (unborn baby)!

<https://youtu.be/d9R7EQCL1qA>

Video: Science for Kids- Where do babies come from?

Watch the video "Science for Kids- Where do babies come from?" to answer the following questions:

1) What is the placenta's job?

2) Amelia's baby is 29 weeks, are his organs developed yet?

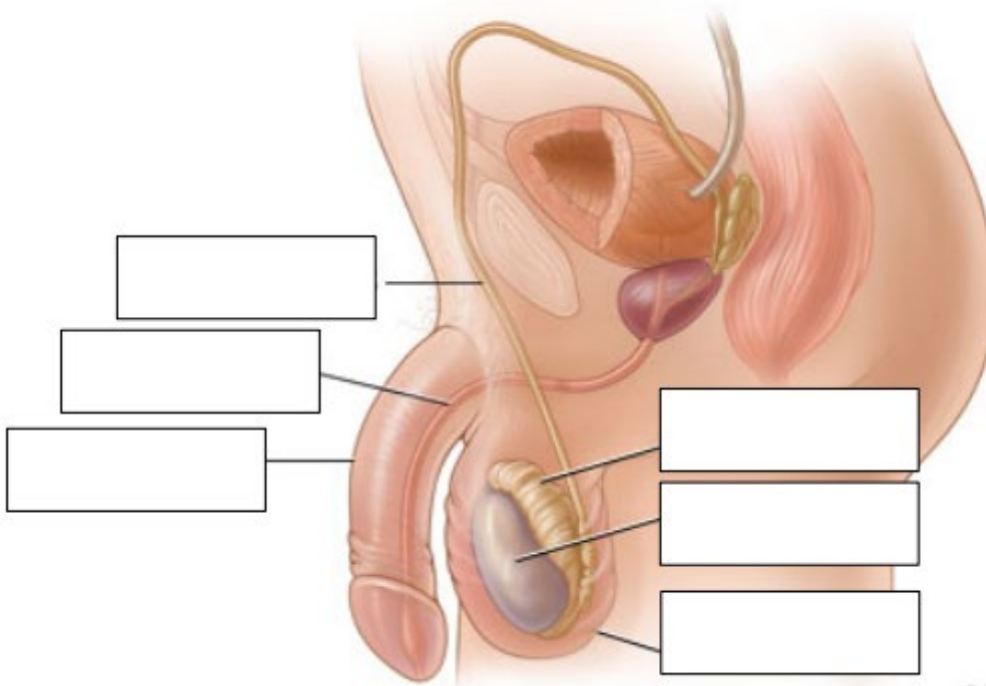
3) How does Amelia's baby breathe? _____

Review

Label the male and female reproductive systems.

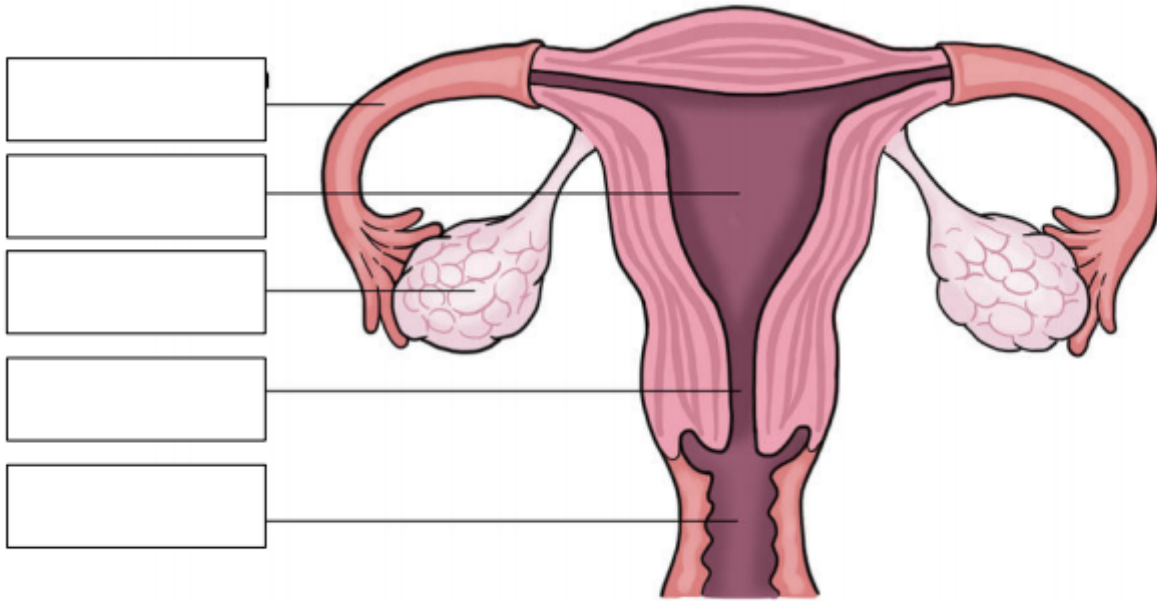
Word Bank

- Vas deferens
- Epididymis
- Scrotum
- Penis
- Urethra
- Testes/Testicles



Word Bank

- Vagina
- Ovary
- Cervix
- Uterus
- Fallopian tube



Explain the process of fertilization. What happens if an egg is successfully fertilized?