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Health
5.ICR.2.1 Recall that puberty is characterized by the development of secondary sex characteristics and onset of reproductive capacity.
5.ICR.2.3 Summarize the functions of the male and female reproductive system.

### Materials

Bowl and Spoon - focus activity (2 pages)

Male and female anatomy images (3 pages) or could be shrunk to be used in student notebooks. Answers are provided in the slides for students to copy.

Venn Diagram - individual or group activity (1 page)

Male and Female Reproductive Anatomy and Function sort cards - individual or group activity (2 pages)

### Focus Step

This will review some of the changes that happen to males and females during puberty that were discussed in 4<sup>th</sup> grade. (See attached activity). If you notice that your students are struggling explaining the changes that happen during puberty and identifying if the changes happen to males, females, or both, take the time to review the changes with students in depth before moving into the anatomy portion of this lesson. (link to 4.ICR.2.1 and 4.ICR.2.2

<https://docs.google.com/document/u/2/d/1MgOyZfgaZPs0QfMKmQwrqJ6IbzGYNxzX/copy#> )

### Teacher Input:

Script to accompany PPT (Research shows best practice is not to separate the class by sex, but if necessary make sure to reorder the slides and start with the sex of the group you are teaching and then teach the information on the opposite sex,) **YOU MUST TEACH ALL CONTENT TO BOTH SEXES.** *Print* Male and female anatomy images on full pages or could also be shrunk to be used in student notebooks. Answers are provided in the slides (7-9) for students to copy.

**Slide 1-** What is the importance of being able to identify the signs of puberty in terms of physical and emotional signs? How will this knowledge help you better understand what is occurring with your body

**Slide 2:** Puberty - a review of what you know. Ask student review questions from what was covered in 4th grade. *What is puberty???* Allow students to answer. If no one can answer, supply them with the following information. Puberty is a stage of development when the body begins to change and grow. Males and females begin to produce hormones that trigger these changes. In the last activity we talked about the secondary sex characteristics that can happen to males, females, and both males and females. *At what age can puberty start?* (8-16). *Can males and females decide when they want to start puberty?* No, the pituitary gland in your brain triggers the start of puberty. *Is puberty normal?* Yes, everyone goes through puberty. For some it will happen earlier than their classmates, some will go through it with the majority of their classmates, and for others it will happen after most of their friends. Any time you start puberty is normal. (If most of your students seem confused about puberty, refer back to 4.IRC.2.1 and 4.ICR.2.2 lessons for a complete review of changes).

**Slide 3:** Who should you talk to if you are anxious, concerned, or worried about something that is or is not occurring during puberty?? A trusted adult

**Slide 4:** What is the only system in the body that is different for males and females?

The reproductive system. During puberty, the organs for both sexes develop and begin to function to enable reproduction to occur, which means that you can have a child (encourage students that just because their body is ready to produce children doesn't not mean they are socially or emotionally ready to become parents). We are going to talk about reproduction and the function of the male and female reproductive systems.

**Slide 5:** Male reproductive system - the function of the male system is to produce male hormones and sperm (that contains genetic material to produce a baby when combined with the female ovum/egg).

**Slide 6:** Female reproductive system - the function of the female system is to produce female hormones and cause the ripening and release of the ovum or egg, which when combined with sperm can produce a baby.

**Slide 7:** Conception - the process when the ovum or egg is fertilized by the sperm. After sexual intercourse, the fertilized egg then implants in the uterus.

**Slide 8:** Let's start at the beginning for males: Sperm and the hormone testosterone are both produced in the *testes*. The testes are two glands located behind the penis that produce sperm cells in sexually mature males. The testes or testicles are housed in the **scrotum**, a pouch-like structure that extends or contracts to help keep sperm at the correct temperature. Males begin producing sperm during puberty. Once the sperm are produced they travel to the *epididymis* (coiled tubes that sit on top of the testes) where the sperm will be stored until they mature. Once the sperm mature they move to the *vas deferens* (a tube that transports the sperm to the urethra. As the sperm travel by way of the Vas Deferens, the *seminal vesicles* which are glands produce fluid for nutrients and motility of the sperm. The *prostate gland* produces a milky fluid that passes into the urethra to protect the sperm and create semen. The *cowper's glands* are located on either side of the *urethra*; they secrete fluid that will neutralize the acid found in the urethra and vagina. The *urethra* transports the semen from where it leaves the Vas Deferens to the end of the penis where the semen exits the body during ejaculation. The Penis has two main functions which are urination and sexual intercourse (serving as a passageway for urine and semen). Urine and sperm cannot pass through the urethra at the same time.

**Slide 9:** Females are born with every ovum/egg they will ever have. These ova are stored in the *Ovaries*. During puberty the ovaries begin to produce the hormones estrogen and progesterone. These hormones cause the ovum to ripen. Each month the ovaries will ripen and release one ovum alternating between the right and left side. Once the ovum is ripe, it is released to the *Fallopian Tubes* (this is where fertilization takes place) and allows the egg to travel to the uterus. The *Uterus* is also referred to as the womb and is the organ that holds and nourishes the baby during pregnancy. During the reproductive years, the uterus prepares for conception. If conception does not occur the uterus releases its lining made up of blood and tissues which is called menstruation. At the base of the Uterus is the *Cervix* and it connects to the *Vagina*. The *Cervix* will dilate during childbirth to allow the baby to pass from the **Uterus** to the **Vagina**. The vagina is a muscular organ that has three main purposes: 1: it receives the penis during sexual intercourse 2. it serves as the passage for menstrual flow to exit the body and 3. It is the birth canal for the delivery of a baby.

**Slide 10:** Most of the female's reproductive organs are found internally, however the *vulva* is the proper term for the female's external genitalia. The vulva contains the labia, clitoris, hymen, and vaginal opening. The *labia* are folds of skin that make up the outer and inner lips that protects the vagina from germs. The *clitoris* is responsible for sexual arousal. The *hymen* is a thin membrane found near the vaginal opening and has no known function. The *vaginal*

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***opening*** is the opening to the vagina where menstrual flow exits, sexual intercourse takes place, and through which a baby is born.

**Assessment:** Organ function card sort game directions: Part 1 - Using the Venn diagram and pre-cut reproductive anatomy cards, have students classify if the reproductive anatomy is found in males, females, or both. Part 2 - Using the pre-cut reproductive anatomy cards and reproductive function cards have students match the anatomy with the correct function (see attachment below for worksheets).

**Writing Assessment-** After completing the organ function card sort, students will then create an explanatory text describing the reproductive process in either the male or female body. (You could also have students do both). Require students to utilize the vocabulary words and explanations taught in the lesson. \*Add-on, encourage students to use sequence vocabulary words.

**Closure:** Puberty is defined by the development of secondary sex characteristics and the capacity to reproduce. Today you learned these changes are a normal part of growing into an adult.

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## **Bowl and Spoon Activity**

Place strips of paper with reproductive anatomy and function in a bowl.

Explain to students that the bowl represents the human body and the spoon represents hormones as they begin to function during puberty. This is a logical analogy because the word hormone is Greek for “to stir things up.”

Begin stirring and have students draw strips one at a time and ask students if this change happens to males, females, or both sexes and explain to the class what occurs during puberty relative to that body part of function. This is an excellent review step and opportunity to clarify misconceptions. [See attached information about each response.]

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**Voice**

**Ovulation/Menstruation**

**Facial Hair**

**(Period)**

**Shoulders Widen**

**Ovaries**

**Testicles**

**Height**

**Penis**

**Sweat Glands**

**Nocturnal Emissions/**

**Oil Glands**

**Wet Dream**

**Body Hair**

**Breasts**

**Pituitary Gland**

**Hips Widen**

## Background Content for Facilitating the Bowl and Spoon Activity

### Males:

- Voice: deepens because the larynx becomes a larger organ; does not happen overnight and therefore males may be self-conscious about their voices cracking or being high pitched some of the time.
- Facial hair: begins as “peach fuzz” then becomes coarser and darker, then mustache and beard
- Shoulders: widen, males get “V” shape
- Testicles: become larger and begin to produce sperm (This is a difference between males and females, as females are born with all the eggs they will ever have. (This has been disputed, whereas males do not begin to produce sperm until puberty)
- Nocturnal emissions: (used to be called “wet dreams”), body practices for reproduction by releasing semen during sleep. Males need to take care of hygiene (washing up, changing pajamas and bedding)
- Penis: becomes larger, may experience spontaneous erections

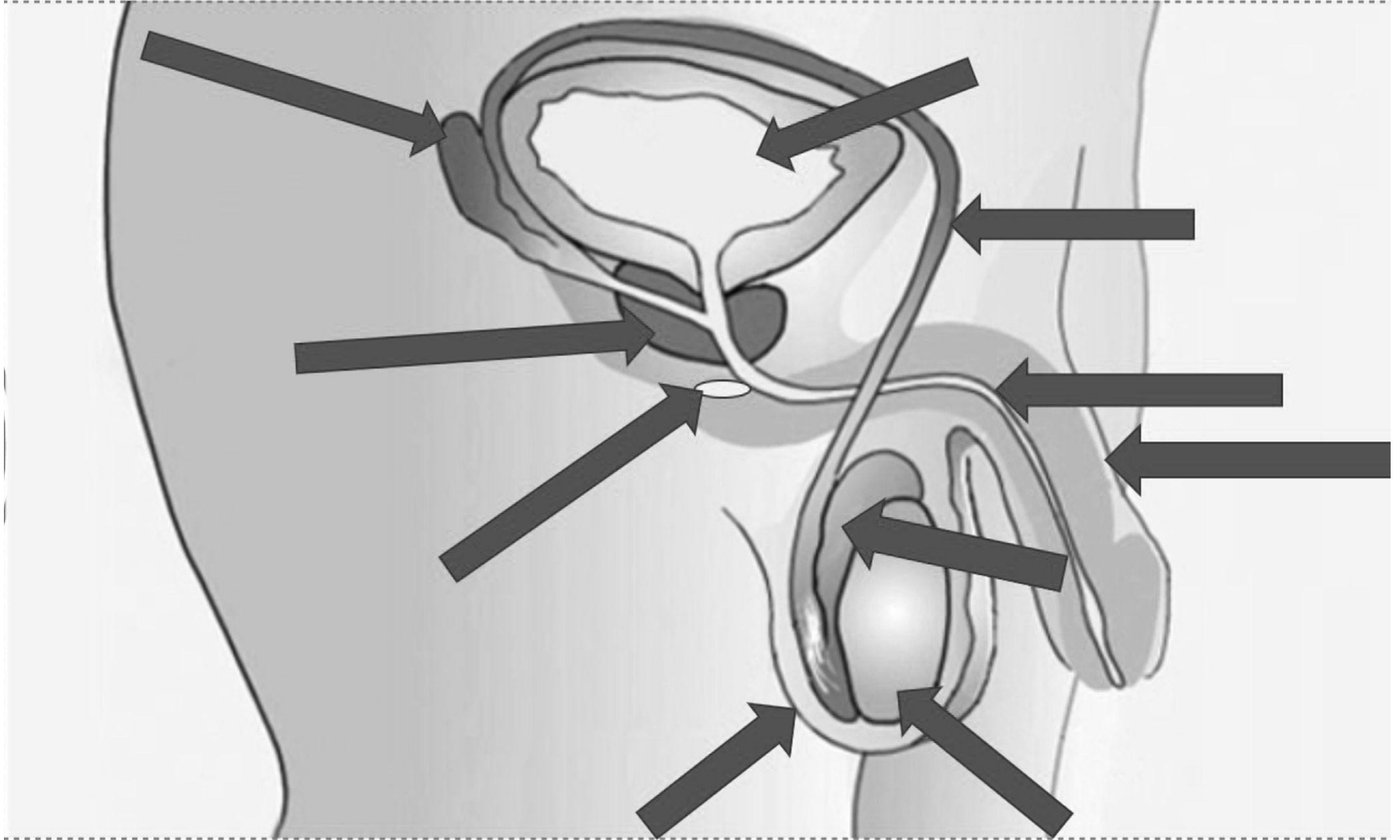
### Females:

- Breasts: beginning of breast development as “breast buds”, may normally occur on one side first, which may cause females to think she has a tumor or growth, fatty tissue (not muscle) therefore not influenced by exercise.
- Hips: widen (in preparation for childbirth); pelvic bones move apart and hips become rounder
- Ovulation/menstruation: often the last developments in puberty. Ovulation involves the ripening of an ovum (egg) and its release into the Fallopian tube. Ovulation occurs first and then triggers menstruation (about 14 days later). Females just beginning their cycles are less regular than mature women.
- Ovaries: begin to produce female hormones. Ova begin to ripen and be released

### Both sexes:

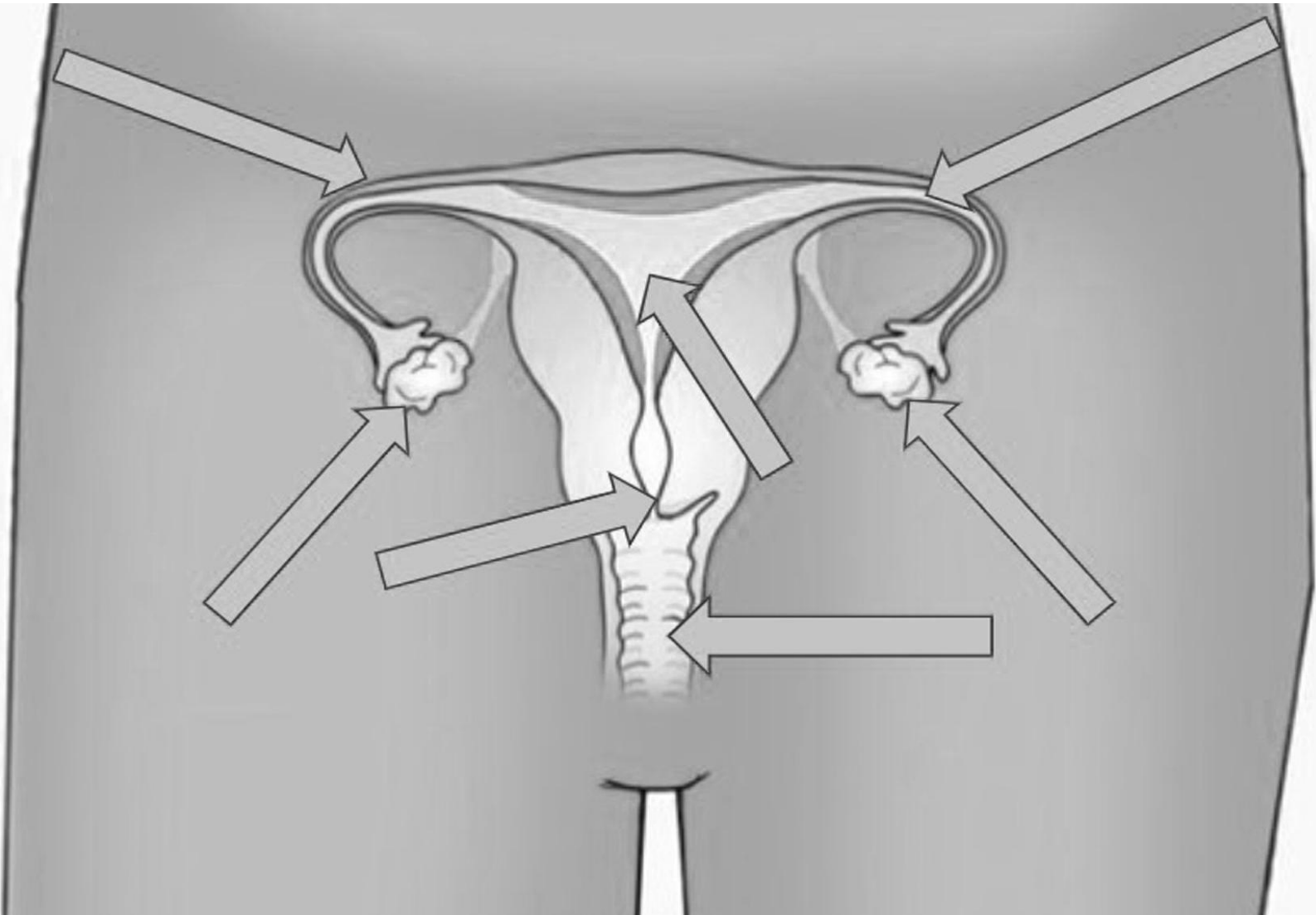
- Height: going through the second biggest growth spurt (after prenatal development). Growth of bones and muscles is not balanced. This explains awkwardness, lack of coordination and increase in accidents.
- Sweat glands: Hormones increase their activity. It is really important to stress personal hygiene, the need for daily bathing, use of deodorant, and changing clothes daily (especially underwear) daily.
- Oil glands/acne: Hormones increase their activity. Many myths about teenage acne have been dispelled. It is not associated with eating fatty foods or chocolate. Washing one’s face is important and one should not pick at their blemishes.
- Body hair: Body hair begins to grow in the armpits and in the groin or pubic area in males and females. For many males, darker, coarser hair grows on the chest and (for some) on the back.
- Pituitary Gland: This gland produces hormones and releases them into the bloodstream, which stimulates the adrenal glands to secrete steroid hormones - cortisol. It also secretes growth hormones, which regulate growth, metabolism and body composition.

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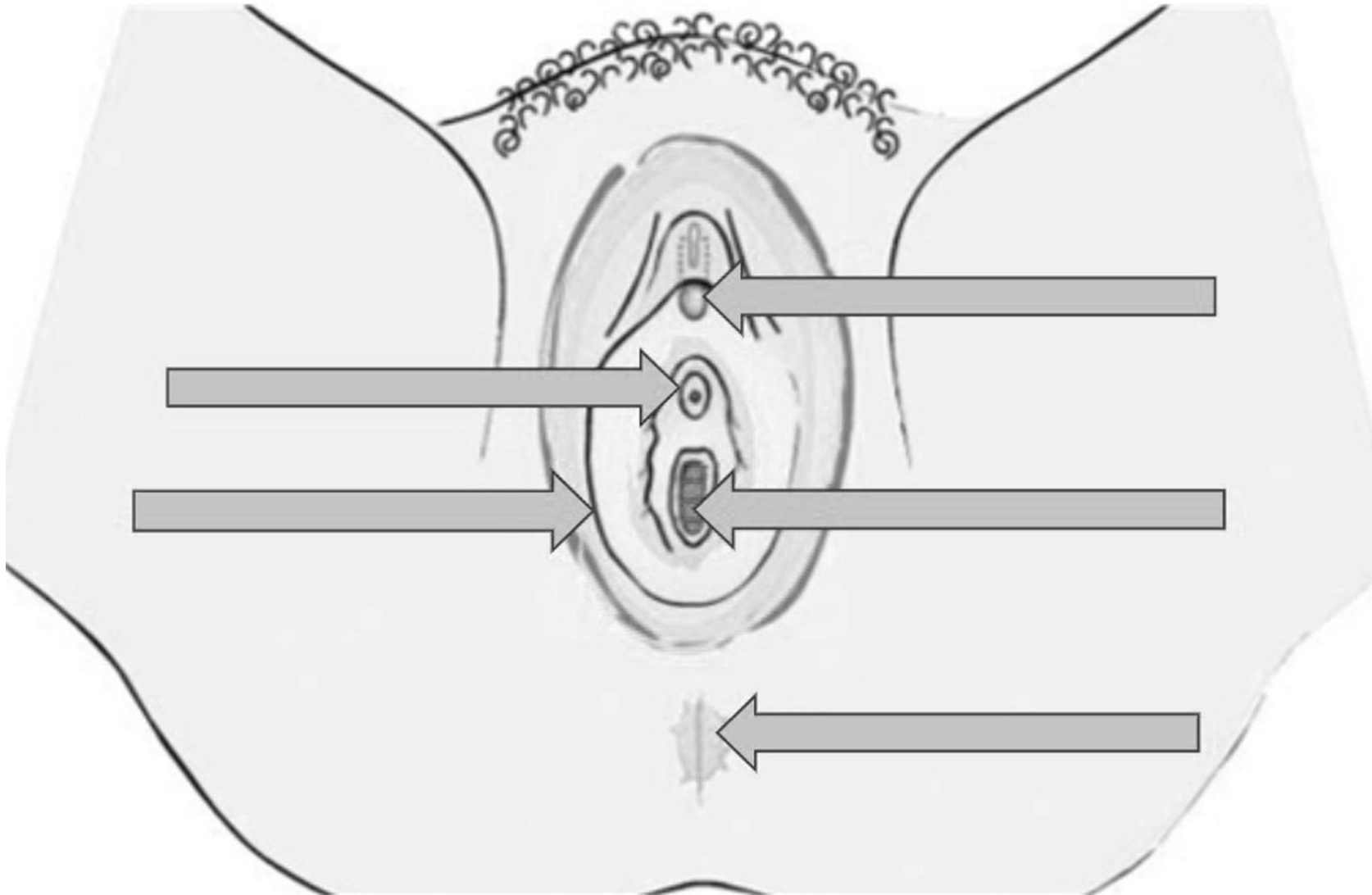
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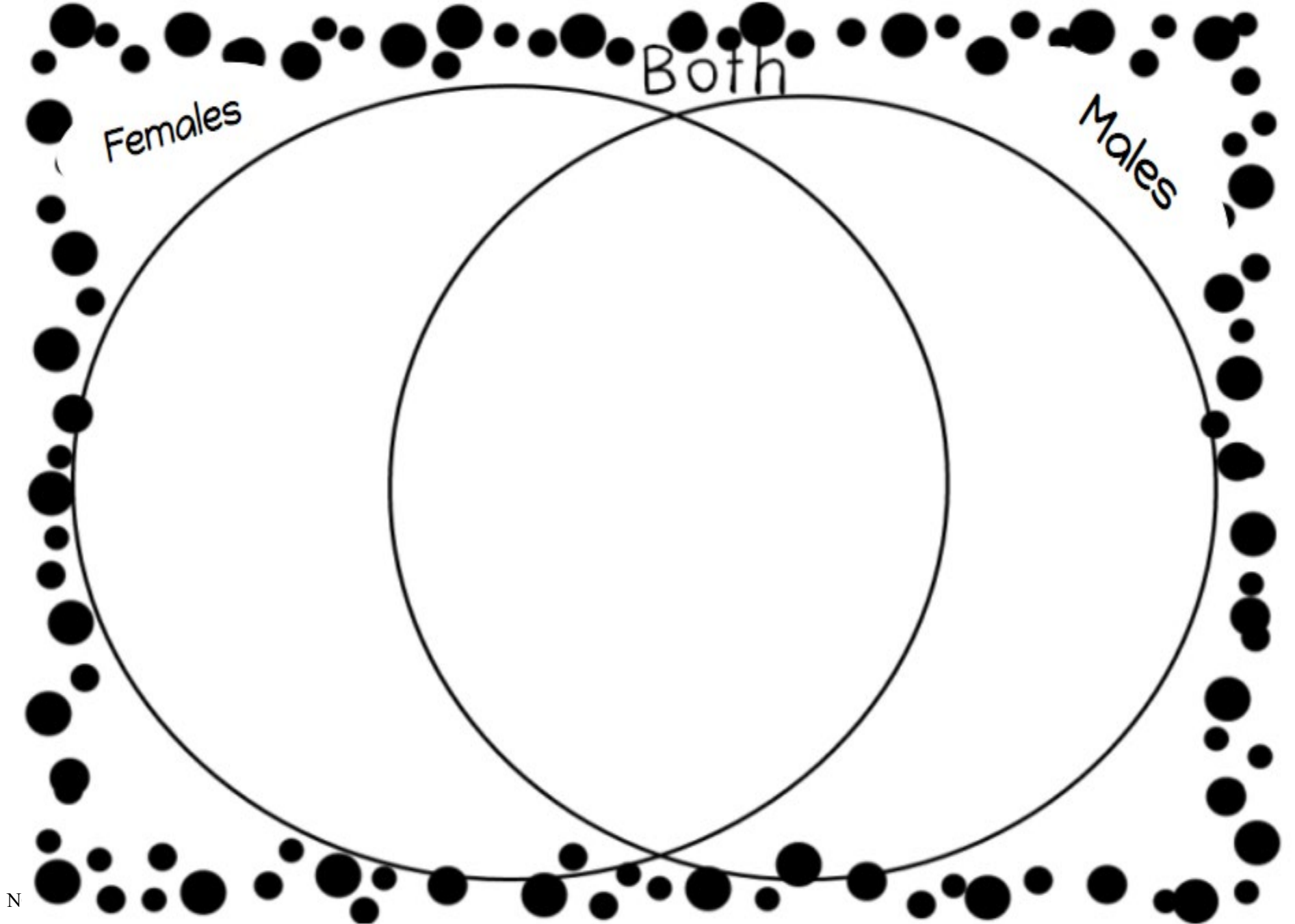


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## Male and Female Reproductive Anatomy

Breasts	Testicle
Labia	Urethra
Uterus or womb	Penis
Vagina	Scrotum
Fallopian Tubes	Prostate Gland
Ovaries	Epididymis
Cervix	Vas Deferens
Ova or egg	Cowper's Gland
Vulva	Seminal Vesicles
Bladder	Sperm

## Male and Female Reproductive Anatomy

Mammary glands which produce milk in females for human babies	Male reproductive organs which lie outside of the body (in the scrotum) and produce sperm
Folds of skin that protect the vagina from germs	A tube-like organ which carries urine from the body in females and urine and sperm from the body in males
Muscular organ in females where the baby develops during pregnancy	Male organ with 2 purposes urination and sexual intercourse
Muscular tube between the uterus and outside the female's body; organ has three functions passage for menstrual flow, sexual intercourse, and birth canal	Pouch that contains the testicles outside the body to allow for temperature regulation.
Tubes between the ovaries and the uterus in which the egg can pass or fertilization can occur	Gland below the bladder in males that produces seminal fluid
Female reproductive organs that produce the hormones estrogen and progesterone and ripen ova or egg	Tubular organ in which the sperm matures before being released.
Muscular tissue at the base of the uterus that will dilate during childbirth	Tube that carries sperm from the epididymis to the penis
Female sex cells	Glands located on either side of the Urethra. They secrete fluid that will neutralize the acid found in the urethra and vagina.
External female genitalia	Gland that provides nourishment to the sperm

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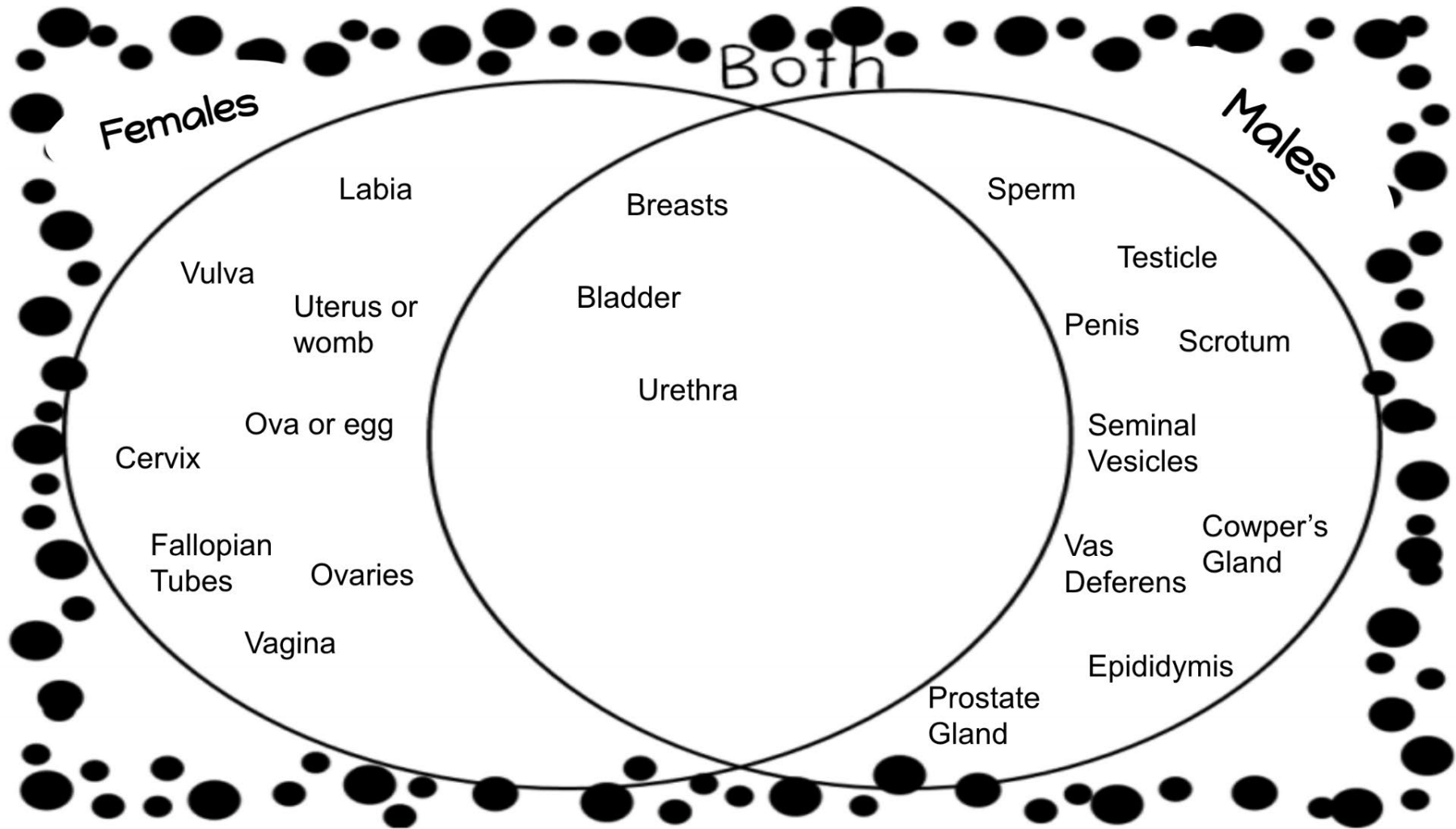
Organ that holds urine

Male sex cells

## Male and Female Reproductive Anatomy

Breasts	Testicle
Labia	Urethra
Uterus or womb	Penis
Vagina	Scrotum
Fallopian Tubes	Prostate Gland
Ovaries	Epididymis
Cervix	Vas Deferens
Ova or egg	Cowper's Gland
Vulva	Seminal Vesicles
Bladder	Sperm

## Venn Diagram Answers



## Male and Female Reproductive Anatomy (answers)

<b>Breasts</b> - Mammary glands which produce milk in females for human babies	<b>Testes</b> - Male reproductive organs which lie outside of the body (in the scrotum) and produce sperm
<b>Labia</b> - Folds of skin that protect the vagina from germs	<b>Urethra</b> - A tube-like organ which carries urine from the body in females and urine and sperm from the body in males
<b>Uterus</b> - Muscular organ in females where the baby develops during pregnancy	<b>Penis</b> - Male organ with 2 purposes urination and sexual intercourse
<b>Ovum/Egg</b> - Female sex cells	<b>Scrotum</b> - Pouch that contains the testicles outside the body to allow for temperature regulation.
<b>Fallopian Tubes</b> - Tubes between the ovaries and the uterus in which the egg can pass or fertilization can occur	<b>Prostate Gland</b> - Gland below the bladder in males that produces milky fluid that passes into the urethra to protect the sperm
<b>Ovaries</b> - Female reproductive organs that produce the hormones estrogen and progesterone and ripen ova or egg	<b>Epididymis</b> - Tubular organ in which the sperm matures before being released.
<b>Cervix</b> - Muscular tissue at the base of the uterus that will dilate during childbirth	<b>Vas Defrens</b> - Tube that carries sperm from the epididymis to the penis
<b>Vagina</b> - Muscular tube between the uterus and outside the female's body; organ has three functions passage for menstrual flow, sexual intercourse, and birth canal	<b>Cowper's Glands</b> - Glands located on either side of the <i>Urethra</i> . They secrete fluid that will neutralize the acid found in the urethra and vagina.
<b>Vulva</b> - External female genitalia	<b>Seminal Vesicles</b> - Glands that provides nourishment to the sperm
<b>Bladder</b> - Organ that holds urine	<b>Sperm</b> - Male sex cells