

Lesson 3: The Journey of a Sperm

Curriculum Expectations

D1.3 – Identify the parts of the reproductive system, and describe how the body changes during puberty.

D1.4 – Describe the processes of menstruation and spermatogenesis, and explain how these processes relate to reproduction and overall development.

[Ontario Health and Physical Education Curriculum](#)

How to Use

This lesson plan contains several activities to achieve the curriculum expectations above. You may choose to do some or all of the activities, based on the needs of your students and the time available. Some of the activities build on the ones that come before them, however all can be used alone. **For a quick lesson, combine activities A, C, D and G.**



Educators may choose to use these [Google Slides](#) to complement this lesson plan. The slides provide visual aids and key points to enhance the teaching experience. They can be used as a flexible resource to engage students and facilitate discussions. Detailed information and student activities remain available in the lesson plan, which can be referenced as needed.

Classroom Activities & Timing

- A. Ground Rules (5 minutes)
- B. Anatomy Vocabulary Matching Game (20 minutes)
- C. Anatomy Diagrams – Fill in the blanks (15 minutes)
- D. The Sperm's Journey (25 minutes)
- E. Class Discussion (10 minutes)

- F. Quiz: Sperm and Testicles (15 minutes)
- G. Question Box (10 minutes)

Required Materials

- Handout and Answer Key: Reproductive System Diagrams
- Handout: The Sperm's Journey
- Handout: Sperm production
- Quiz and Answer Key: Sperm and Testicles
- Cards: Anatomy Vocabulary

*All the student handouts are available at the end of this lesson.

Considerations

Prior to discussing this content, we encourage you to consult your school board's expectations about notifying parents/caregivers about the topics that will be covered. School boards typically require a drafted letter to be sent in advance of the unit.



Some parents/caregivers may choose to exempt their child from instruction related to the Human Development and Sexual Health expectations ([PPM 162: Exemption from instruction related to the Human Development and Sexual Health Expectations in The Ontario Curriculum: Health and Physical Education, Grades 1-8, 2019](#)).

Background Information for Educators

Puberty brings significant changes to the reproductive system, with menstruation and spermatogenesis being key processes. Educators can help students understand these changes by providing clear, accurate information and encouraging open conversations with trusted adults. Understanding the physical and emotional shifts of puberty reduces stigma, fosters empathy, and helps students feel confident in their development.

Teaching about menstruation, sperm production, and related body changes also introduces students to the importance of self-care and healthy habits. Framing these topics as a natural part of human growth empowers students to make informed decisions and promotes acceptance of the diverse experiences that come with adolescence.

Understanding the basics: The sperm-producing reproductive system & related systems

External genitals

- **Penis**
 - The external sex organ.
 - Semen and urine are released from the penis.
 - It is made up of spongy tissue that fills up with blood during an erection, which can occur due to various reasons, including arousal, hormones, or reflexes.
 - There is no bone in the penis, even though ‘boner’ is common slang for an erection.
 - During puberty, the penis grows as does the rest of the body. Size varies from person to person.
- **Foreskin**
 - The skin on the end of the penis that retracts during an erection.
 - This skin may be partially removed in a procedure called circumcision. Circumcision is a procedure where the foreskin is surgically removed. It is often performed shortly after birth for cultural, religious, or personal reasons. Some people are circumcised, and some are not. It doesn’t affect the function of the penis. There is not usually a medical or health reason for circumcision.
 - People who are uncircumcised gently pull back the foreskin to clean around the head of the penis every day or so.
- **Scrotum**
 - The sac that holds the testicles.
 - The testicles are kept just below body temperature in order to produce healthy sperm. The scrotum pulls the testicles closer to the body if it is cold and lowers away from the body if it is hot.
 - During puberty, the scrotum changes in size and appearance, typically becoming darker and more textured.
- **Testicles**
 - The sex glands that produce sperm and testosterone.
 - They are held in the scrotum.
 - They are on the outside of the body so that they can stay cooler than body temperature for healthy sperm production.
 - It is normal for one testicle to hang lower than the other, which helps them avoid compression.
 - This is a very sensitive area of the body. It is important to protect the testicles during contact sports, etc.

Internal reproductive organs

- **Epididymis**
 - A long, coiled tube that connects a testicle to the vas deferens.
 - This is where sperm matures and is stored.
- **Vas Deferens**
 - A narrow tube that carries sperm from the testicles to the urethra.
- **Seminal Vesicles**
 - Two small pouches located behind the bladder that produce and store seminal fluid.
 - This fluid combines with sperm and other fluids to create semen.
- **Prostate Gland**
 - Swells to block urine from leaving the bladder during ejaculation.
 - Produces a fluid that feeds and protects sperm as part of semen.
- **Urethra**
 - A tube that carries both urine and semen to the outside of the body.
 - Urine and semen cannot be released at the same time.
 - The urethra has two branches: one connects to the bladder, and the other connects to the vas deferens. When semen is being released, a valve blocks the bladder branch, preventing urine from passing. This is similar to how the body separates swallowing and breathing, directing air to the lungs and food to the stomach.
- **Bladder**
 - The sac that stores the urine produced by the kidneys.
 - It is part of the urinary system, not the reproductive system.

Other organs

- **Anus**
 - The opening at the end of the digestive tract where feces leave the body.
 - The anus is part of the digestive system, not part of the reproductive system.

How the reproductive system functions (physiology)

- **Erection**
 - An erection is a reflex action triggered by various stimuli, including hormone fluctuations, physical touch, pleasant thoughts or feelings, and sometimes even vibrations (e.g., from riding a bicycle).
 - The brain sends a signal to the penis, causing it to become larger and firmer, and stand away from the body.
 - While erections can occur at any age, they tend to happen more frequently and sometimes unexpectedly during puberty.

- They are a normal part of growing up and can occur at different times, such as upon waking, during sleep, or due to physical or emotional stimuli.
- Erections typically go away on their own or after ejaculation.
- **Sperm**
 - Sperm are the male reproductive cells that can fertilize an egg to create a baby.
 - Each sperm cell is microscopic; over 300 million sperm can be found in just 5 ml of semen.
 - The testicles produce millions of sperm daily, which are stored in the epididymis. Sperm that are not released through ejaculation are reabsorbed by the body.
 - During ejaculation, sperm travel through the vas deferens and mix with fluid from the seminal vesicles and prostate gland to form a whitish, sticky fluid called semen.
- **Semen**
 - Semen is a mixture of sperm and fluid from the seminal vesicles and prostate gland.
 - It is the fluid ejaculated from the penis.
- **Ejaculation**
 - While erections may occur at any age, ejaculation typically begins during puberty when the body starts producing sperm and semen.
 - The first ejaculation usually happens between the ages of 13 and 17.
 - The average volume of semen ejaculated is usually about 2 to 5 ml (or approximately up to 1 teaspoon).
 - Nocturnal emissions (wet dreams) occur when a person gets an erection and ejaculates during sleep. They are the body's way of adapting to the onset of sperm and semen production. Some people experience frequent nocturnal emissions, while others may have few or none. They typically become less frequent as puberty progresses and the body adjusts to regular sperm and semen production.

A. Ground Rules

Ensure [ground rules](#) are established before beginning this lesson. For classes that have already established ground rules, quickly reviewing them can help ensure a successful lesson.

B. Anatomy Vocabulary Matching Game

In this activity, students will identify the key components of the reproductive system and describe the basic functions.

1. Display the Anatomy Definitions posters around the room.
2. Divide the class into smaller teams of 3-4 students.
3. Give each team a set of Anatomy Vocabulary cards.
4. Teams will work together to match each vocabulary word to its corresponding definition. Once they decide, they will post their vocabulary card on the definition they believe is correct. Encourage teams to make their own decisions and not worry about matching other groups' choices.
5. Review the matches as a class. Discuss the correct answers and adjust the cards to the correct definitions as needed.

Answer Key:

Vocabulary Word	Definition
Anus	The opening at the end of the digestive tract where feces leave the body.
Bladder	A sac inside the body that holds urine.
Ejaculation	Release of semen from the penis.
Erection	The penis becomes larger and firmer because of increased blood flow.
Foreskin	The skin of the penis tip.
Penis	The external sex organ that releases semen and can become erect.
Scrotum	External sac containing the testicles.
Semen	Thick fluid containing sperm.
Seminal Vesicles	Where semen is produced and stored.
Sperm	Reproductive cell made in the testicles.

Testicles	Sperm producing glands.
Urethra	Urine and semen pass through this tube to the outside of the body.
Vas Deferens	Narrow tubes that carry sperm from the testicles to the urethra.

C. Anatomy Diagrams – Fill in the Blanks

The diagrams of anatomy help students learn the vocabulary associated with reproduction. Some students may need help in understanding the different views of the reproductive systems (e.g., internal, external, anterior or side view). Using the diagrams that show how internal organs are positioned within the body can help clarify their function and location.

1. Distribute the *Reproductive System diagrams* handout. Explain how the external and internal views of the reproductive system relate to each other.
2. Ask the students to fill in as many of the blanks as they can. They may work individually, in pairs, or in their small groups from the previous activity. Emphasize that it's okay if they don't know all the answers.
3. Display the correct answers so all students can assess and correct their diagrams and discuss.
4. If the class has already completed the Understanding Menstruation lesson, ask the students which parts of the anatomy are the same for everyone, or which have similar functions. If that lesson has not been completed, ask them to predict which parts/functions will be the same.

Emphasize that not everyone's genitals look like the diagrams or pictures shown. Variation in size, shape, and appearance is normal, healthy, and part of human diversity.

D. The Sperm's Journey

This activity helps students deepen their understanding of reproductive anatomy by exploring how the reproductive system functions.

1. Distribute *The Sperm's Journey* handout.
2. Ask students to complete the activity by filling in the blanks with the appropriate terms. This can be done individually or in a small group.

3. Provide resources such as the Reproductive System Diagrams handout or the Sperm Production Diagram, if needed.
4. Review the handout together as a class, discussing any questions or misconceptions.

Answers

1. Testicles
2. Scrotum
3. Sperm
4. Penis
5. Vas Deferens
6. Seminal vesicle
7. Semen
8. Urethra
9. Ejaculation

E. Class Discussion

In this activity, students will review their knowledge of the reproductive system and sperm production, develop resiliency skills, and identify support people.

Discuss the following questions as a class:

What are some reasons people might get an erection?

- Strong emotional or physical feelings towards someone
- Reflex response to touch or pressure
- Pleasant thoughts or feelings
- Hormone changes
- Excitement from feeling happy or enthusiastic about something
- Vibrations or gentle physical stimulation
- Nocturnal emission (during sleep)
- Some erections happen randomly, without a specific cause

How do you think a person might feel if they get a nocturnal emission or an unwanted erection?

- Embarrassed
- Shy
- Excited

What are some ways to cope with an unwanted erection?

- Focus on something else until it goes away.
- Sit down.
- Put your hands in your pockets to try to hide it.
- Wear baggy pants if it keeps happening.
- Remember that it is probably more noticeable to you than to anyone else and this is a normal part of growing up.

What are some ways to cope with a wet dream?

- Change your sheets.
- Wash your pajamas or underwear.
- Remember that nocturnal emissions are a normal and healthy part of growing up.

What do you think is most interesting about sperm production?

A few examples:

- Sperm are produced in the testes through a process called spermatogenesis. It's fascinating that millions of sperm are made every day in the body, even though it takes a long time for them to fully mature.
- Once sperm are produced, they travel through a series of tubes and are stored in the epididymis, where they mature. This entire process shows how the body prepares for reproduction.
- Once sperm are mature, they gain the ability to move by swimming, which is necessary for reaching and fertilizing an egg.
- Sperm production can be influenced by a person's lifestyle, health, and even stress levels, which shows how the body is constantly adjusting to environmental factors.
- Unlike eggs, which a person with ovaries is born with and does not produce more of during their life, a person with testes can produce sperm throughout their life, which is a unique aspect of sperm production.

If you still have questions about anatomy or physiology, puberty changes, or sexuality who can you ask?

- Parent or caregiver
- Trusted adult
- Teacher or guidance counsellor
- Health care provider

F. Sperm and Testicles Quiz

This quiz serves as an excellent review tool, a wrap-up for the unit, or a fun energizer to break up other activities.

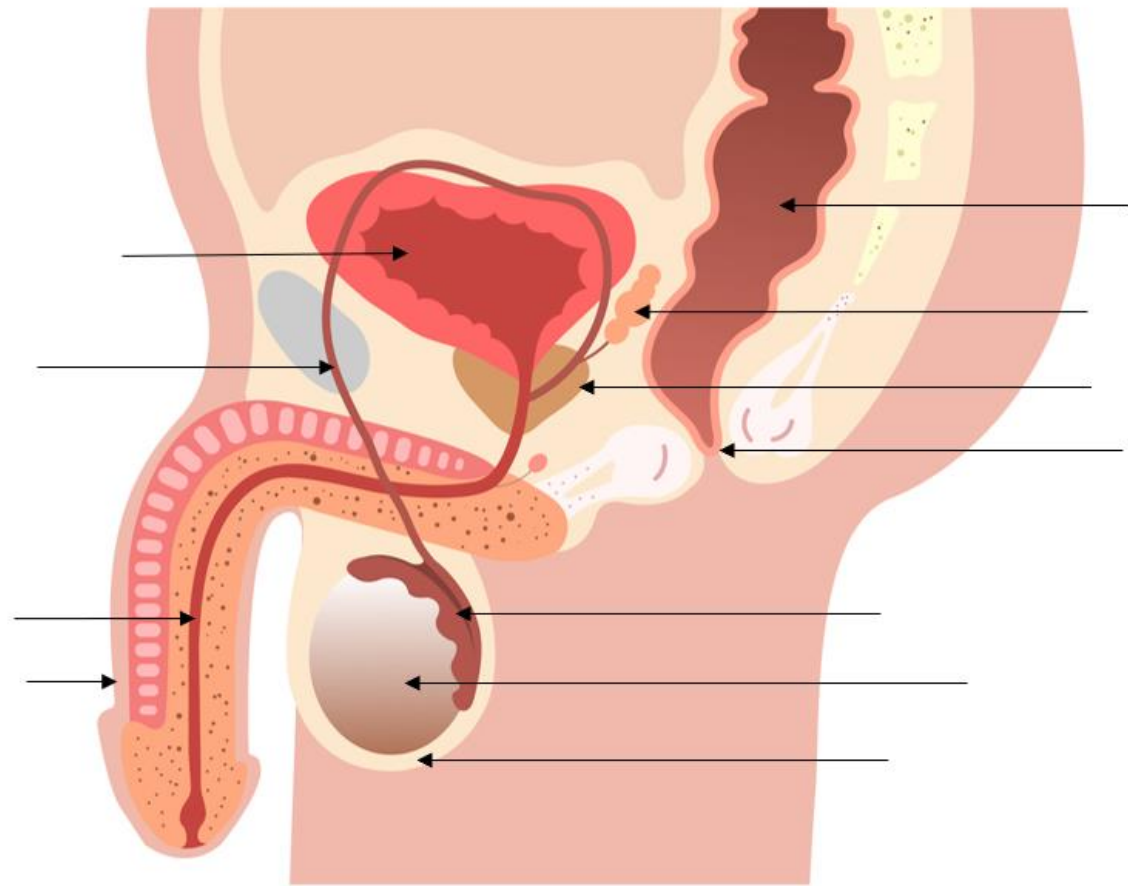
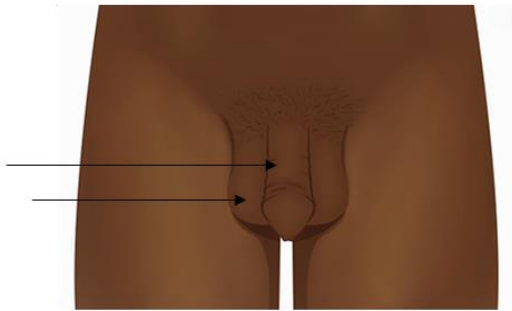
1. Use the Quiz “Sperm and Testicles” located in the [slideshow](#).
2. As a class, answer the quiz questions together and discuss the answers.

G. Question Box

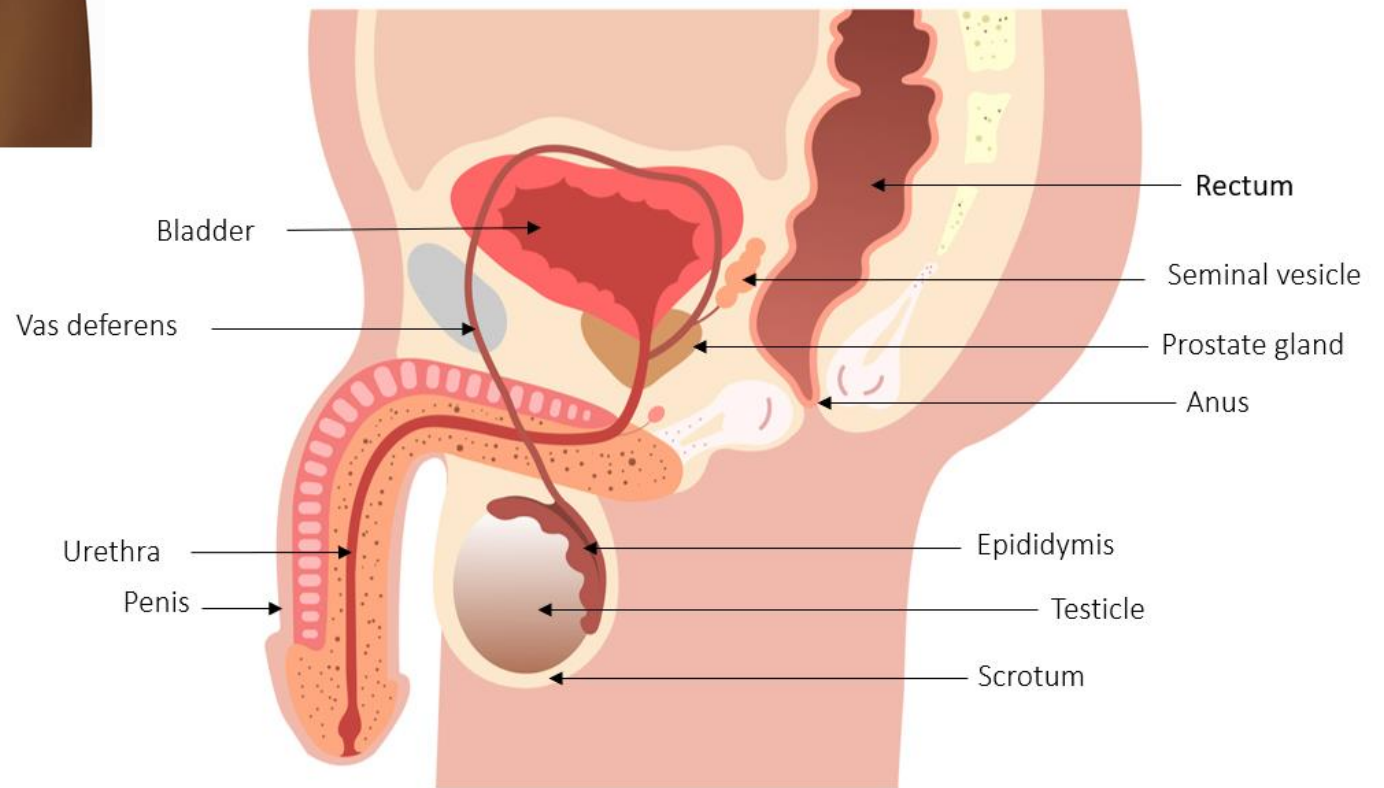
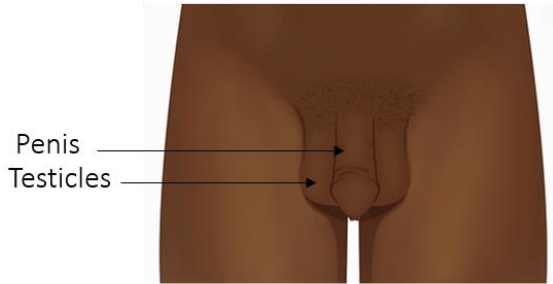
Have students submit questions to the [question box](#) and address them next class.

Addressing the questions at the next class allows you time to review the questions and prepare responses.

Fill in the Blanks: Reproductive System



Answer Key: Reproductive System



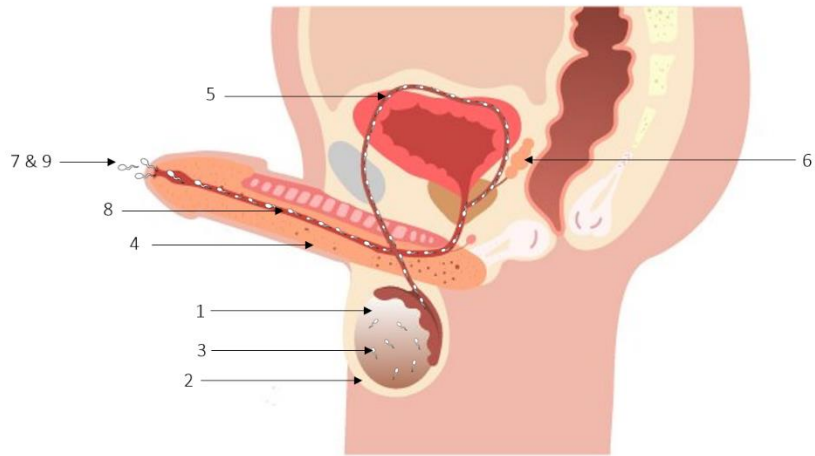
Name: _____

The Sperm's Journey

Read the following story and fill in the blanks using the words provided.

Word Bank

Ejaculation
Penis
Scrotum
Semen
Seminal Vesicle
Sperm
Testicles
Urethra
Vas deferens



Once upon a time, there was a pair of _____ (1). They were held in a special sac called the _____ (2).

This sac could hold the testicles close to the body to keep them warm, or let them hang away from the body to keep them cool. The testicles made special reproductive cells called _____ (3). Once these cells were made, they would wait to be released from the testicles. Sometimes, they would wait so long that they dissolved. Other times, they would be released from the testicles, make a journey through the reproductive system and leave the body.

One day, the sperm got to be released from the body. First, the _____ (4) became larger and firmer until it stuck out from the body. When the penis gets this way it is called an erection. The sperm travelled up the _____ (5). Along the way, it mixed with fluid from the prostate gland, and with seminal fluid, which was made in the _____ (6).

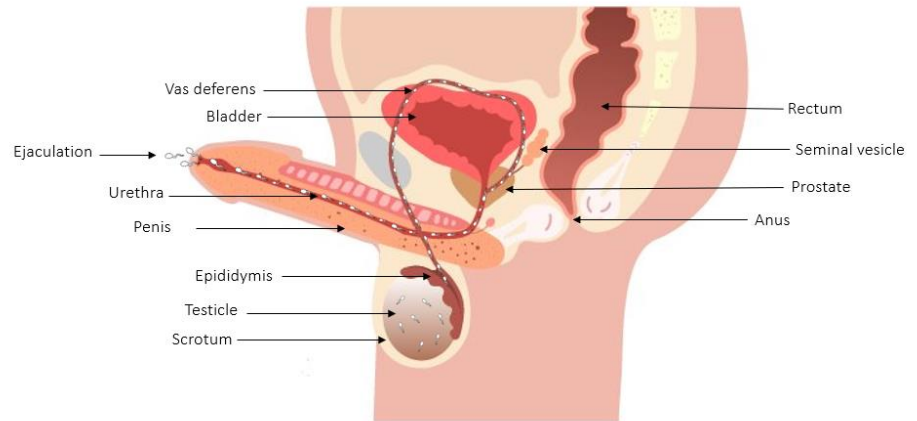
Once these fluids mixed, they decided to call themselves _____ (7). Together they travelled from the vas deferens into a tube called the _____ (8).

By this time, the semen was almost at the end of the journey. After travelling through the vas deferens and the urethra, the semen was released from the penis in a process called _____ (9). The erection went away and the penis became smaller and softer.

Answer Key: The Sperm's Journey

Word Bank

Ejaculation
Penis
Scrotum
Semen
Seminal Vesicle
Sperm
Testicles
Urethra
Vas deferens



Once upon a time, there was a pair of **testicles (1)**. They were held in a special sac called the **scrotum (2)**.

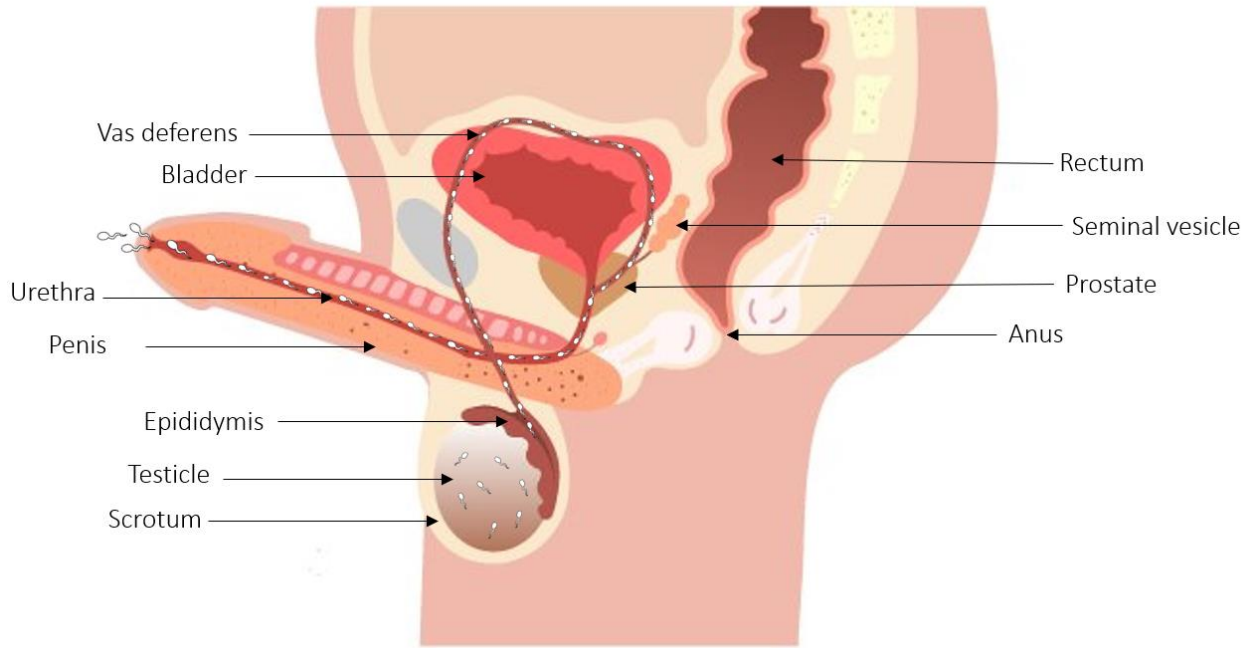
This sac could hold the testicles close to the body to keep them warm, or let them hang away from the body to keep them cool. The testicles made special reproductive cells called **sperm (3)**. Once these cells were made, they would wait to be released from the testicles. Sometimes, they would wait so long that they dissolved. Other times, they would be released from the testicles, make a journey through the reproductive system and leave the body.

One day, the sperm got to be released from the body. First, the **penis (4)** became larger and firmer until it stuck out from the body. When the penis gets this way it is called an erection. The sperm travelled up the **vas deferens (5)**. Along the way, it mixed with fluid from the prostate gland, and with seminal fluid, which was made in the **seminal vesicle (6)**.

Once these fluids mixed, they decided to call themselves **semen (7)**. Together they travelled from the vas deferens into a tube called the **urethra (8)**.

By this time, the semen was almost at the end of the journey. After travelling through the vas deferens and the urethra, the semen was released from the penis in a process called **ejaculation (9)**. The erection went away and the penis became smaller and softer.

Sperm Production



Answer Key: Sperm and Testicles Quiz

Correct answers are in bold text.

1. The external parts of this reproductive system include the:
 - a) Prostate and scrotum
 - b) Urethra and penis
 - c) Penis and scrotum**
 - d) Bladder and anus

The prostate and urethra are internal parts; the bladder is part of the urinary system and the anus is part of the digestive system.

2. The internal parts of this reproductive system include the:
 - a) Bladder, kidneys and urethra
 - b) Scrotum, penis and testicles
 - c) Anus, penis and rectum
 - d) Vas deferens and seminal vesicles**

The bladder and kidneys are part of the urinary system. The penis, testicles and scrotum are external parts of the reproductive system. The anus and rectum are parts of the digestive system.

3. The sac that contains the testicles is called:
 - a) Vas deferens
 - b) Scrotum**
 - c) Penis
 - d) Testes

The scrotum is the sac that holds the testicles. The testicles produce sperm and are located inside the scrotum.

4. Release of semen from the penis is called:
 - a) Erection
 - b) Circumcision
 - c) Testiculation
 - d) Ejaculation**

Ejaculation is the process of releasing semen from the penis.

5. The testicles:
- a) **Are held in the scrotum**
 - b) **Produce sperm**
 - c) **Are a very sensitive area of the body**
 - d) Produce semen

Semen is made of sperm and fluids from the prostate and seminal vesicles. The testicles are where sperm are produced.

6. Semen is:
- a) The same thing as sperm
 - b) Made of urine and sperm
 - c) Stored in the vas deferens
 - d) **A whitish fluid containing sperm**

Semen is a whitish fluid that contains the sperm and fluids produced by the seminal vesicles and prostate gland, which help protect and nourish sperm.

7. Sperm are produced in the:
- a) **Testicles**
 - b) Seminal vesicles
 - c) Urethra
 - d) Penis

Sperm are produced in the testicles and stored in the epididymis until ejaculation. They then leave the body through the urethra in the penis.

8. Sperm travel from the:
- a) Prostate gland through the vas deferens and out the rectum
 - b) Urethra past the penis and out the bladder
 - c) **Testes through the vas deferens and out the urethra**
 - d) Seminal vesicle through the vas deferens and out the urethra

Sperm travel from the testes, through the vas deferens, and are released from the penis through the urethra during ejaculation.

9. Sperm that are not released by ejaculation are:
- a) Released when urinating
 - b) **Reabsorbed into the body**
 - c) Held in the testicles forever
 - d) Released with feces

Sperm that are not ejaculated are reabsorbed by the body to be recycled.

10. Wet dreams (nocturnal emissions):

- a) Can be a normal and healthy part of growing up**
- b) Often begin in puberty**
- c) Only happen when a person dreams about someone they like
- d) Happen every night

Wet dreams are a normal part of growing up for many people during puberty. They occur when semen is released from the penis while sleeping and can happen without any conscious awareness. People of any gender can experience an orgasm during sleep.

Anatomy Vocabulary Matching Game Definitions

The opening at the end of the digestive tract where feces leave the body.

A sac inside the
body that holds
urine.

Release of semen from the penis.

The external sex organ that releases semen and can become erect.

The penis becomes
larger and firmer
because of
increased blood
flow.

The skin of the
penis tip.

External sac
containing the
testicles.

**Thick fluid
containing sperm.**

Where semen is produced and stored.

Reproductive cell
made in the
testicles.

Sperm producing glands.

Urine and semen
pass through this
tube to the outside
of the body.

Narrow tubes that
carry sperm from
the testicles to the
urethra.

Anus

Bladder

Ejaculation

Erection

Foreskin

Penis

Scrotum

Semen

Seminal Vesicles

Sperm

Testicles

Urethra

Vas Deferens