

# SEXUAL DEVELOPMENT

## Lesson 1

GRADE

7

### LEARNER OUTCOME<sup>1</sup> W-7.3:

Examine the human reproductive process, and recognize misunderstandings associated with sexual development.



#### MATERIALS:

1. **HANDOUT: The Male Reproductive System: How Does it Work**
2. **HANDOUT: Male Reproductive System**
3. **ANSWER KEY SLIDE: Male Reproductive System**
4. **SLIDE: Male Reproductive System**
5. **HANDOUT: The Female Reproductive System: How Does it Work**
6. **HANDOUT: Female Reproductive System**
7. **ANSWER KEY SLIDE: Female Reproductive System**
8. **SLIDE: Female Reproductive System**
9. **CARDS: Reproduction**
10. **HANDOUT: “When I Was Your Age...”**
11. **SLIDE: Menstrual Cycle**
12. **SLIDE: Sperm Production**
13. **SLIDE: Conception**
14. **SLIDE: Implantation**



#### INTRODUCTION:

Students need to be able to identify the basic components of the human reproductive system and to describe how they function in order to discuss human sexuality. This lesson provides them with an overview of human sexual anatomy and physiology, menstruation, sperm production, conception and fertilization.



## APPROACHES/STRATEGIES:

### A. GROUND RULES (5-10 min)

Ensure ground rules are established before beginning this lesson. For classes that have already established ground rules, quickly reviewing them can promote a successful lesson.

### B. MALE AND FEMALE REPRODUCTIVE SYSTEM DIAGRAMS (20 min)

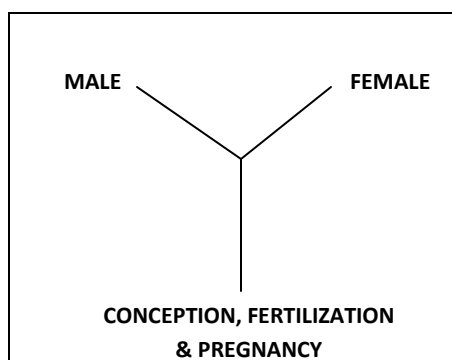
*Students identify the basic parts of the human reproductive system and describe how they function.*

1. Distribute the handout **Male Reproductive System: How does it Work**, and the **Male Reproductive System** handout.
2. Ask students to label and colour the diagram according to the instructions. You may choose to do this activity together with the students using a slide of the handout and coloured markers while student volunteers read from the **Male Reproductive System: How Does it Work?** handout.
3. Ask students to correct their diagram's using the slide of the **Male Reproductive System** answer key.
4. Repeat the same process using the:
  - a. **Female Reproductive System** handout,
  - b. **Female Reproductive System: How Does it Work?**
  - c. **Female Reproductive System** Slide, and
  - d. **Female Reproductive System** answer key.

### C. REPRODUCTION CHAIN (20- 40 min)

*Students demonstrate a basic understanding of the male and female reproductive physiology. This is a review of grade 5 Human Sexuality.*

1. Draw a "Y" shaped continuum on floor using tape or chalk (ensure the line can be removed once the activity is complete). Label one part of the top of the "Y" "MALE", the other "FEMALE", and the bottom "CONCEPTION, FERTILIZATION & PREGNANCY" as in the example below.



2. Using the **Reproduction cards**, give one card per student until all cards are distributed.
3. Have students arrange themselves in the proper order along the “Y” continuum. Ask the students to sit down along the lines once they feel that they are in the correct order.
4. Go through the cards together, and make corrections according to this answer key and the **Menstrual Cycle, Sperm Production, Conception & Implantation slides**.

#### **MALE axis (sperm production)**

1. Sperm made in testicles
2. Sperm matures in epididymis
3. Sperm travel up vas deferens
4. Sperm mix with seminal fluid to make semen
5. Sperm leave the penis (ejaculation)

#### **FEMALE axis (menstrual cycle)**

1. Lining of uterus is shed (day 1 of menstrual flow)
2. Lining of uterus thickens with blood
3. Ovulation occurs (egg released from ovary)
4. Egg travels through fallopian tube
5. Egg enters the uterus
6. Egg dissolves if unfertilized
7. Lining of uterus is shed (day 1 of menstrual flow)

#### **FERTILIZATION, CONCEPTION and IMPLANTATION axis**

1. Sperm enters vagina.
  2. Sperm travels up the vaginal canal.
  3. Sperm meets egg in the outer portion of the fallopian tube (fertilization).
  4. Fertilized egg travels down the fallopian tube into the uterus.
  5. Fertilized egg attaches itself to the lining of the uterus.
  6. Fertilized egg uses lining of the uterus for nourishment.
  7. Fertilized egg takes nine months to grow completely into a full-term baby
5. Debrief this activity using the following questions:

#### **What else do you know about menstruation?**

It can begin as early as 8 and as late as 16.

- Usually one egg is released each menstrual cycle. If more than one egg is released, and if they are fertilized, it means a woman may have a multiple



Teachers may consider colour coding the lines of the “Y” and the cards into three sets: Male, Female, and Conception & Fertilization. This will help students place themselves. For example, the “BOY” axis could be purple, and the cards outlining sperm production could be printed on purple paper.

pregnancy (twins, etc.). If twins are a result of two eggs being fertilized, they are called fraternal twins. Identical twins happen when a fertilized egg splits into two before cells begin dividing.

- Eggs can live 12-24 hours from the time of ovulation.
- Girls need to be aware of good hygiene (using pads, etc.) to ensure healthy practices during menstruation.
- Cramps can be a part of menstruation, and can be alleviated using wellness methods like exercise or a hot water bottle. For severe cramps, your doctor may give medication.

#### **What else do you know about sperm production?**

- Sperm cells mature at about 15 – 16 years of age.
- Sperm production and ejaculation first happens around ages 12-14.
- “Wet dreams” are ejaculations that occur while sleeping. It is normal to experience these, or not to experience these.
- As many as two million sperm can be released during each ejaculation.
- Sperm can live inside a female’s body 3 to 7 days from the time of ejaculation.

#### **Will a pregnancy occur every time sexual intercourse occurs?**

- No. Pregnancy only happens if a sperm fertilizes an egg and if the fertilized egg implants in the uterine wall.
- This can happen if intercourse takes place when a female is ovulating.
- Women are most likely to become pregnant if intercourse happens around the middle of the menstrual cycle. The length of the menstrual cycle is different for each woman, so it is difficult to predict.

#### **What do menstruation and sperm maturation make possible?**

- Menstruation and sperm maturation are



Students may have different views concerning nocturnal ejaculation. It is important to be sensitive to these views, but to reassure students that “wet dreams” are a normal occurrence during puberty.

Keep in mind that students with differing abilities may have very different interpretations of the menstrual cycle, menstrual bleeding, ejaculation, etc. This may be very scary or very funny to them and it is important for the teacher to anticipate different reactions. Keep explanations concrete and use simple visuals where possible.

indications that a person can produce a baby.

- It is important to remember that ovulation occurs before bleeding; therefore a girl can get pregnant before her first period.

**Although the body is capable of producing a baby once menstruation and sperm maturation occur, why would most people wait until they are much older to have a baby?**

- Discuss issues surrounding the need to be emotionally, educationally or financially ready to parent.
- There are health problems for the baby and the mother that are associated with an early pregnancy such as babies with low birth weight.



Students considered high risk or with differing abilities may benefit from more instruction about fetal development and parenting. For example:

- Have each student evaluate whether or not he/she is ready (has the skills and desire) for parenting. Recognize and acknowledge those goals that they would like to achieve before parenting.
- List with students persons whom they know and respect who do not have children.
- Create a realistic budget for a couple with a child. Have students compare this budget to their current income.
- Discuss other factors which might increase expenses even further, such as an extended illness.
- Go to a local department store or use advertisements and price a pre-made list of essential items one would need for a baby.

#### **D. WHEN I WAS YOUR AGE... (5 min today, 30 min homework, 5 min next class)**

*Students begin to build a support network to help them cope with puberty.*

1. Distribute the “**When I Was Your Age...**” handout for students to complete as a homework assignment.
2. Explain that students can complete this interview with a parent or supportive adult.
3. Allow students to work in partners or small groups to brainstorm a list of questions they would like to ask a supportive adult regarding the adolescent experience, and choose the three best questions to use as interview questions. If time permits, groups could share their chosen questions with the rest of the class.
4. Dedicate time to debrief this activity during the next lesson.



Although adolescents challenge their parents' ideas, they want to hear their parents' opinions and values. A survey conducted with Canadian teenagers found the teens saw their parents as their role models when it came to sexuality and sexual health, not celebrities from movies, television, music or sport<sup>2</sup>. Many personal values are learned and reinforced at home. Invite students to discuss this topic with their family and encourage open dialogue.



### QUESTION BOX (10min)

Have students fill out questions and address them next class.



### TAKE IT HOME

Students complete the “**When I Was Your Age...**” handout.



Keep in mind that all students do not live in a “traditional” family nor do they have equal opportunities for open discussion within their “family”. Although it is best for students to complete this assignment with a supportive parent or guardian, it may not be possible. Be sensitive to the needs of your students.



### SELF REFLECTION

During the lesson, were:

- Ground rules being followed?
- Good practices established regarding group work and discussion?

What will you change for future classes with this group?

What will you change for future use of this lesson?



## STUDENT ASSESSMENT

During the lesson, did students:

### Knowledge:

- Identify the basic parts of the human reproductive system?
- Describe the process of sperm production?
- Describe the process of menstruation?
- Describe how pregnancy can occur?

### Skills:

- Participate in class discussion and exemplify listening and appropriate speaking skills?

### Attitudes:

- Begin to articulate that menstruation and sperm production are signs that a person is capable of reproduction?
- Accept that menstruation and sperm production are positive, healthy aspects of puberty?

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1. Alberta Education. (2002). *Health and life skills guide to implementation: Kindergarten to grade 9*. Retrieved from <http://education.alberta.ca/media/352993/pos.pdf>
  2. Frappier, J.Y., Kaufmen, M., Baltzer, F., Elliott, A., Lane, M., Pinzon, J., et al. (2008). Sex and sexual health: A survey of Canadian youth and mothers. *Paediatr Child Health*. 2008 13(1): 25–30. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2528827/pdf/pch13025.pdf>

## THE MALE REPRODUCTIVE SYSTEM: HOW DOES IT WORK?

**On your diagram of the male anatomy, label and colour the internal and external organs according to the instructions below. Vocabulary words that need to be written on the diagram have been *italicized*.**

Start at the lower right hand side of your diagram. This special sac that houses the two ***testicles***, is called the ***scrotum***. Colour the scrotum in blue pencil crayon. The ***scrotum*** is a sac of loose skin divided into two parts. Each part contains a ***testicle***, ***epididymis*** (the small kidney shaped gland at the top of the scrotum), and the end of the ***vas deferens***. Label the three words ***epididymis***, ***testicle***, and ***scrotum*** at the lower right hand side of your diagram. Colour the ***epididymis*** purple. Each testicle contains tiny tubes that are continuously creating sperm throughout a man's life. When puberty occurs, sperm move to the ***epididymis*** to mature.

The ***vas deferens*** allows the sperm to move up to the ***seminal vesicle***. Follow the ***vas deferens*** tube up to the top of the diagram. Colour the entire ***vas deferens*** dark green, but be sure to stop colouring as the ***vas deferens*** tube enters the penis.

The large egg-shaped organ in the centre of your diagram is the ***bladder***. This organ stores urine until it can be expelled from the body. It is not considered part of the reproductive system. Label the ***bladder***, but leave it uncoloured.

As the ***vas deferens*** curves around the top of the bladder and back down again, it passes the ***seminal vesicle***. This gland is oblong-shaped, and is located behind the bladder on your diagram. The ***seminal vesicle*** produces fluids that activate sperm. Colour it light blue.

The ***prostate gland*** is located just below the bladder. It supplies most of the liquid that combines with the sperm prior to ejaculation. When a man is sexually aroused to the point of orgasm, the fluid from the ***prostate gland*** combines with the sperm to make semen. Strong muscle contractions in and around the ***prostate gland*** contract rapidly to force the semen out of the ***urethra***. Colour the ***prostate gland*** orange.

Just under the prostate gland rests a very small round gland called the Cowper's gland. This gland secretes a fluid that removes any acidity from the urethra just before ejaculation. This ensures that the sperm have the best chance of living!



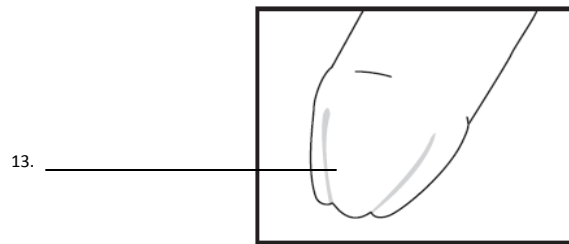
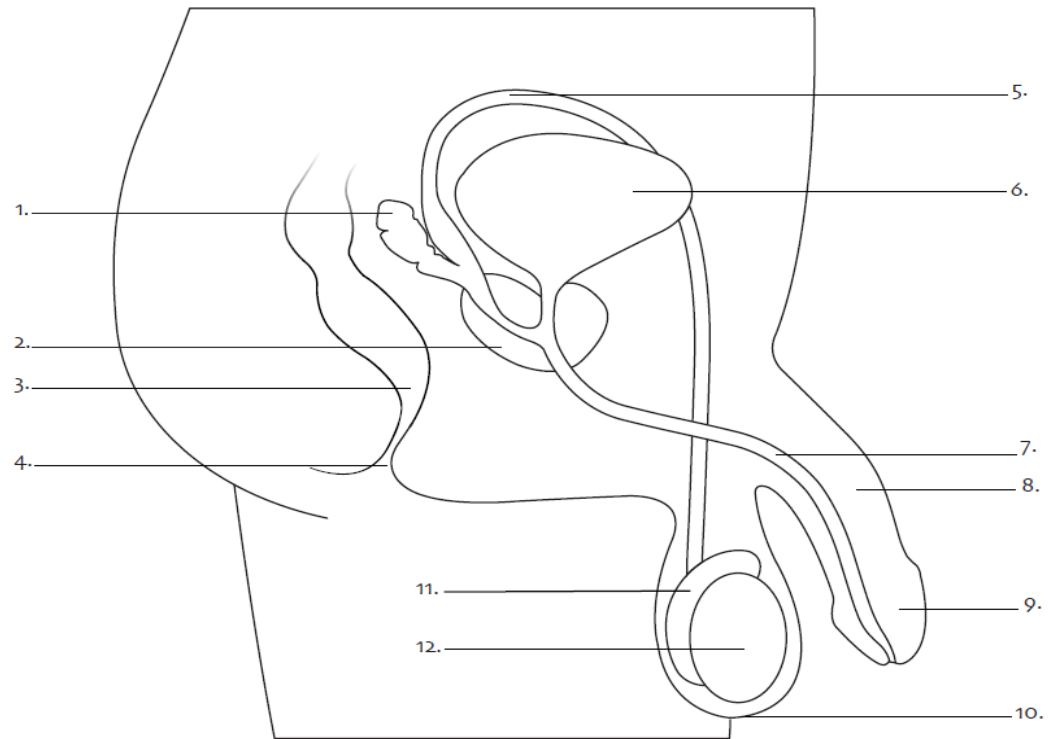
## GRADE 7 SEXUAL DEVELOPMENT LESSON 1 HANDOUT

The tube leading from the various glands down the length of the *penis* is called the **urethra**. The **urethra** is the special passageway that allows urine to be voided from the bladder, and allows semen to travel out of the body during sexual intercourse. Both urine and semen cannot be in the **urethra** at the same time. During an erection, a small valve at the entrance from the bladder seals it off. Colour the **urethra** light green.

The organ in which the **urethra** is housed is called the **penis**. The *penis* has spongy tissues containing small blood vessels and nerves. During sexual arousal, the spongy tissue fills with blood, and the penis hardens. This is called an erection. An erection is a necessary part of human reproduction. It allows the man to insert his penis into the woman's vagina, which enables semen to reach the egg inside the woman's reproductive system.

At the very tip of the penis is the **glans**, which is the head of the penis. This part of the male reproductive system may or may not be covered by **foreskin**. If the male is circumcised, the foreskin will not cover the **glans**. Some parents may choose not to circumcise their son, while other parents do. Colour the area of the **glans** yellow.

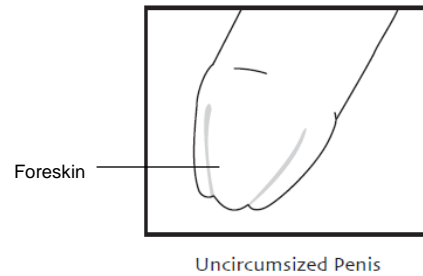
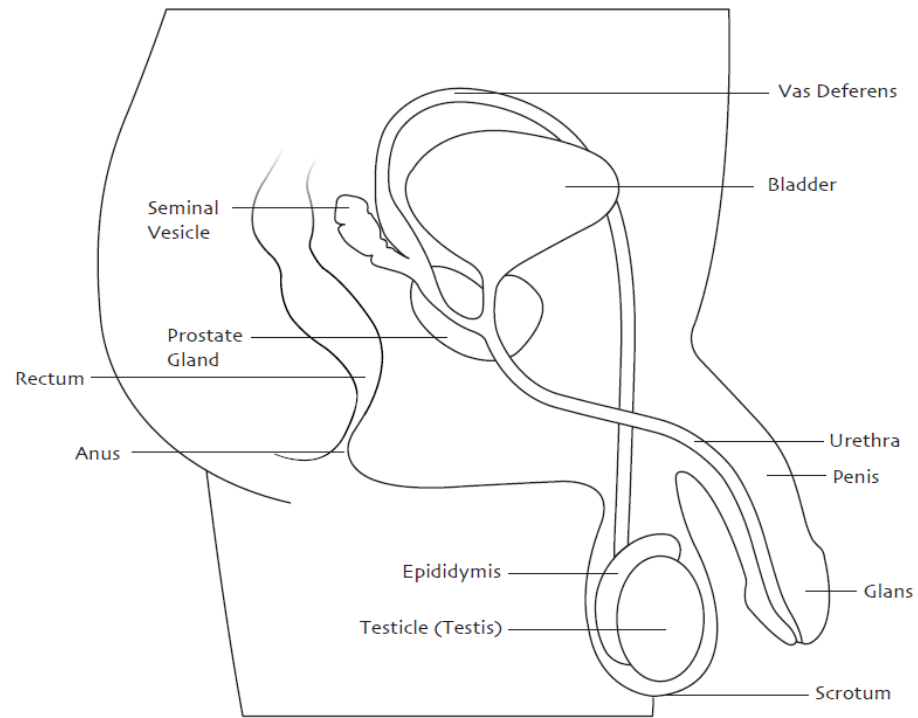
Male Reproductive System



Uncircumcised Penis

Adapted from *Sexuality: An Education Resource Book*, Canada: Globe/Modern Curriculum Press, page 241

### Male Reproductive System



## THE FEMALE REPRODUCTIVE SYSTEM: HOW DOES IT WORK?

**On your diagram of the female anatomy, label and colour the internal and external organs according to the instructions below. Vocabulary words that need to be written on the diagram have been *italicized*.**

Start at the very bottom of your diagram. The opening leading up into the internal reproductive system is called the ***vagina***. The ***vagina*** is a soft, muscular elastic tube. Its inner lining is soft and moist. During sexual arousal, the walls of the ***vagina*** secrete a lubricant to assist in intercourse. The ***vagina*** also functions as the birth canal for a baby, and allows menstrual flow to exit the body from the uterus. Colour the ***vagina*** dark blue.

The ***uterus*** is a pear shaped organ about the size of a woman's fist that stretches to house the baby, placenta and amniotic fluid during pregnancy. It is very strong, muscular and stretchable! Colour the ***uterus*** pink.

At the top of the ***vagina*** is the ***cervix*** which is the bottom of the ***uterus***. This is slightly open in women who are not pregnant, but is plugged during pregnancy to avoid infection. When a baby is ready to be born, the ***cervix*** opens to a diameter of 10 cm. Colour the ***cervix*** purple.

The thick tissue inside the entire uterus is the ***uterine lining***. If fertilization does not occur, this lining is shed every month. This is called menstruation, the process by which the uterus rids itself of its old lining, and prepares for the possibility of conception the following month. About 14 days after ovulation, the body begins to shed the uterine lining, which is made up of blood and fluid. This is commonly called a "period". Colour the ***uterine lining*** red.

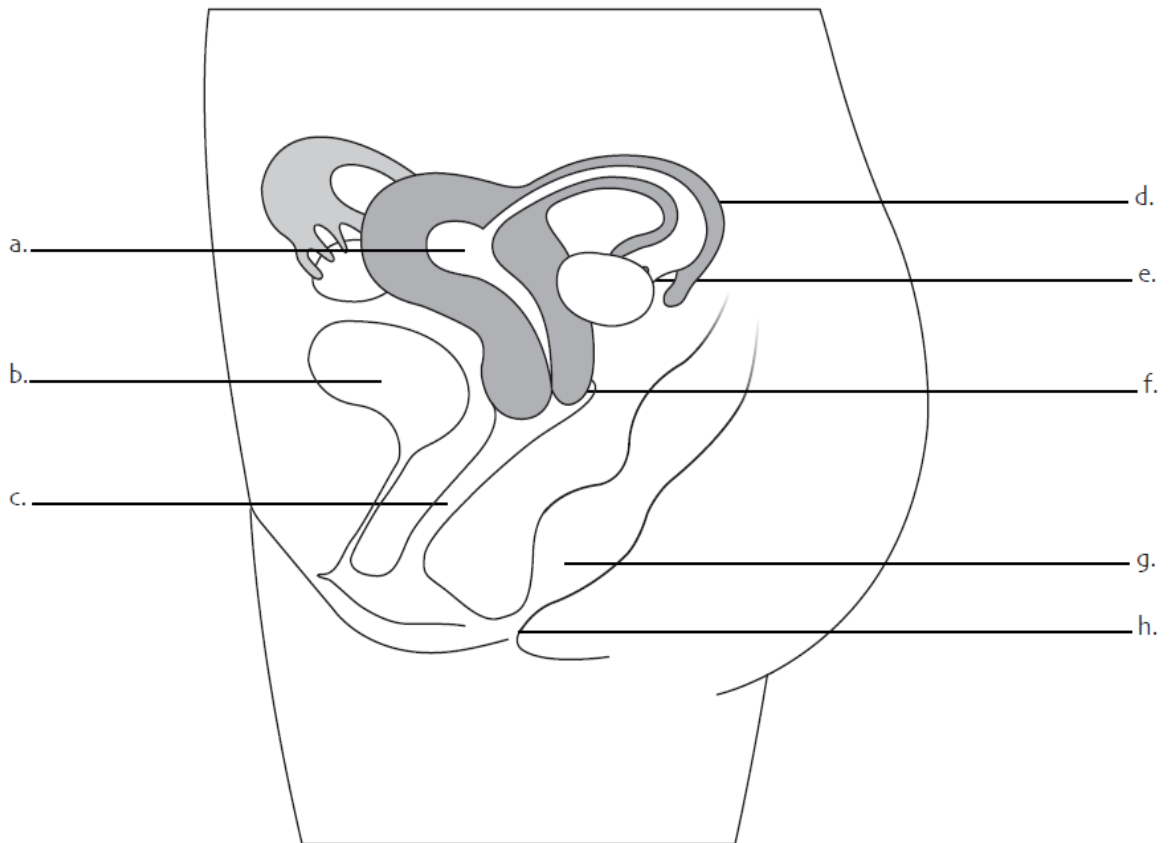
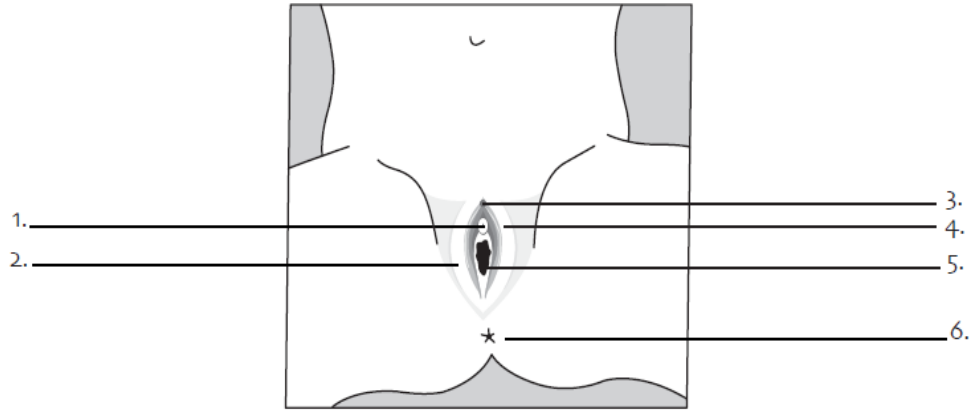
Follow the tube out of the uterus to the right on your diagram. This is called the ***fallopian tube***. The ***fallopian tube*** carries the egg from the ***ovary*** down to the ***uterus***. This journey usually takes about three days. Usually, conception (joining of the sperm and egg) occurs in the ***fallopian tube***. Colour both ***fallopian tubes*** on the diagram orange.

The finger-like structures at the end of the fallopian tube are called ***fimbria***. The internal, very tiny hair like structures inside the ***fallopian tube*** are called ***cilia***. The ***cilia*** help the egg move down the ***fallopian tube*** from the ***ovary***.

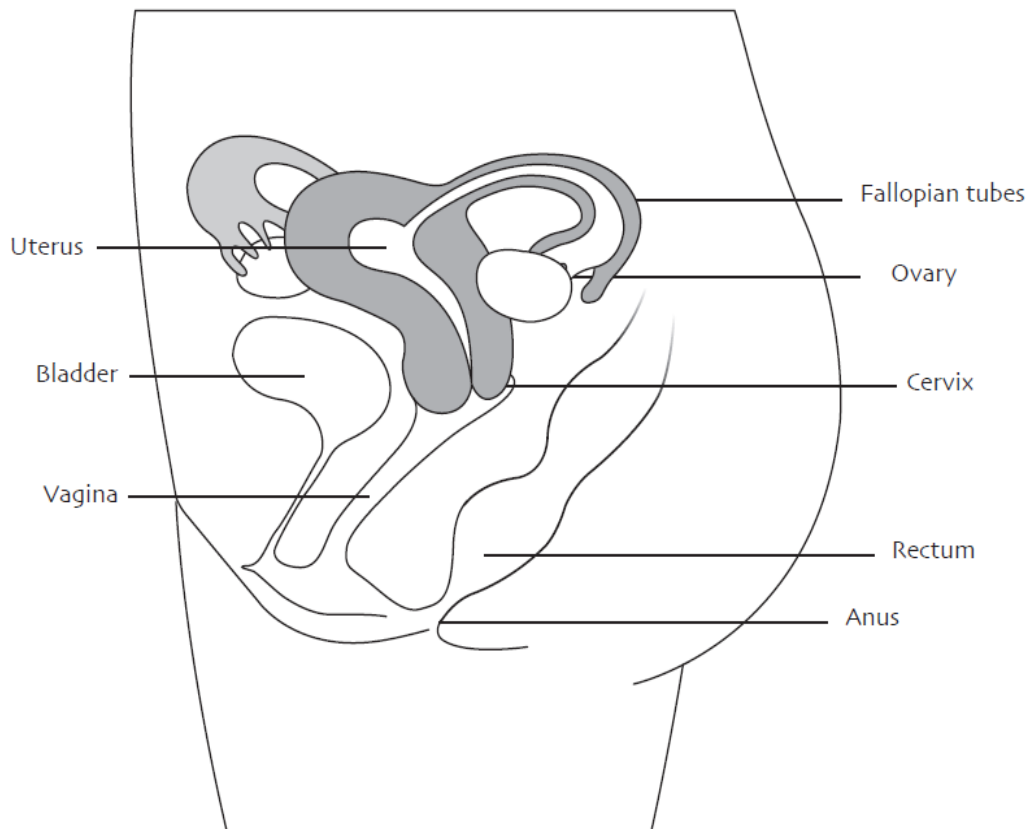
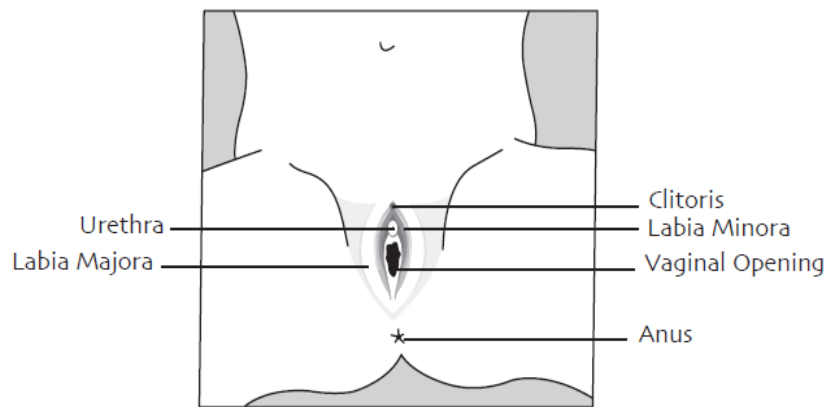
## GRADE 7 SEXUAL DEVELOPMENT LESSON 1 FEMALE REPRODUCTIVE SYSTEM HANDOUT

Two egg-shaped organs on either side of the uterus are the **ovaries**. These are the female counterparts to the male testicles. An **ovary** is about the size of an almond. When a woman is born, the ovaries already contain all the ova (eggs) she will ever produce. There are up to 400,000 ova. Unlike the testicles, **ovaries** only house eggs. They don't produce them. The ovary releases one ovum (a single egg) each month. This process is called ovulation. When the **ovary** releases the egg it travels down the fallopian tube, with help from cilia. If a sperm does not fertilize the egg, it will not adhere to the uterus wall. As a result, menstruation will occur. Colour each *ovary* light brown, and label your diagram on the left side.

## Female Reproductive System



## Female Reproductive System



Lining of the uterus shed  
(day 1 of menstrual flow)

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Ovulation occurs  
(egg [ovum] released from ovary)

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Lining of uterus thickens with blood



Egg (ovum) travels through fallopian tube

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Egg (ovum) enters the uterus

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Egg (ovum) dissolves if unfertilized

---

Lining of uterus shed  
(day 1 of menstrual flow)

Sperm made in testicles

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Sperm mature in epididymis

---

Sperm travel up vas deferens

---

Sperm mix with seminal fluid to make  
semen

Sperm leave the penis  
(ejaculation)

---

Sperm enters vagina

---

Sperm travels up the vaginal canal

---

Sperm meets egg (ovum) in the outer portion of the fallopian tube (fertilization)

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Fertilized egg (ovum) travels down the fallopian tube into the uterus

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Fertilized egg (ovum) attaches itself to the lining of the uterus

Fertilized egg (ovum) uses  
lining of the uterus for nourishment

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Fertilized egg (ovum) takes nine months  
to grow completely into a full-term baby

Student Name: \_\_\_\_\_

Parent/Adult Support: \_\_\_\_\_

# WHEN I WAS YOUR AGE...

At times, you may feel as if you're the only one who feels the way you do. It may help to remember that everyone has gone or will go through puberty. Although every generation of teenagers has its own special set of concerns, some feelings and experiences are the same for teenagers of every generation. Do you ever wonder what puberty was like for your parents – or grandparents – or other supportive adults in your life?

### In Class

- Work with a partner or small group to brainstorm a list of questions to ask a parent, grandparent or supportive adult about what life was like as a teenager.
- From your list, choose the three best questions – the ones you are most interested in and the ones most likely to encourage your subject to open up.
- Write these three questions in the blanks provided. Have your teacher review the questions before you go home.

### At Home

- Share this handout with a parent or supportive adult, and ask that person if you can complete it together. Schedule about a half an hour with the adult for the interview. Give the adult this handout so that they can think about the answers before the interview.
- Interview the adult using the questions provided.
- Both you and the adult sign the tear-off slip at the bottom of the page when the interview is complete. This tear-off slip can be handed in to show that you have completed the activity.

1. \_\_\_\_\_  
 \_\_\_\_\_

2. \_\_\_\_\_  
 \_\_\_\_\_

3. \_\_\_\_\_  
 \_\_\_\_\_

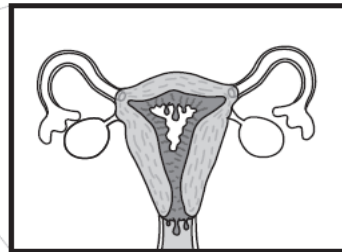
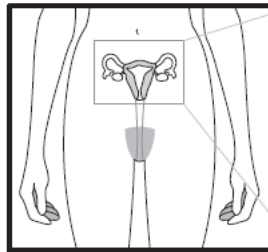
(Tear off and hand in this slip only)

**We completed the “When I Was Your Age...” interview.**

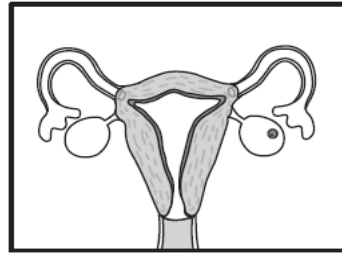
\_\_\_\_\_  
Student

\_\_\_\_\_  
Adult

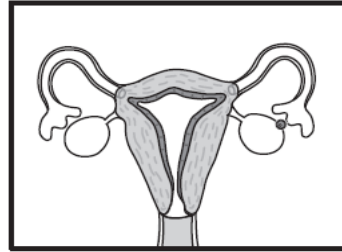
GRADE 7 SEXUAL DEVELOPMENT LESSON 1 MENSTRUAL CYCLE SLIDE



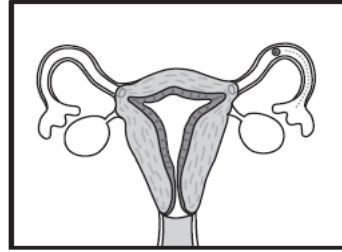
Beginning of cycle (menstruation)



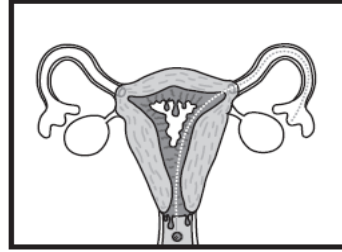
Ovum starts to mature  
(lining begins to thicken to  
prepare for possible pregnancy)



Release of mature ovum  
(ovulation)

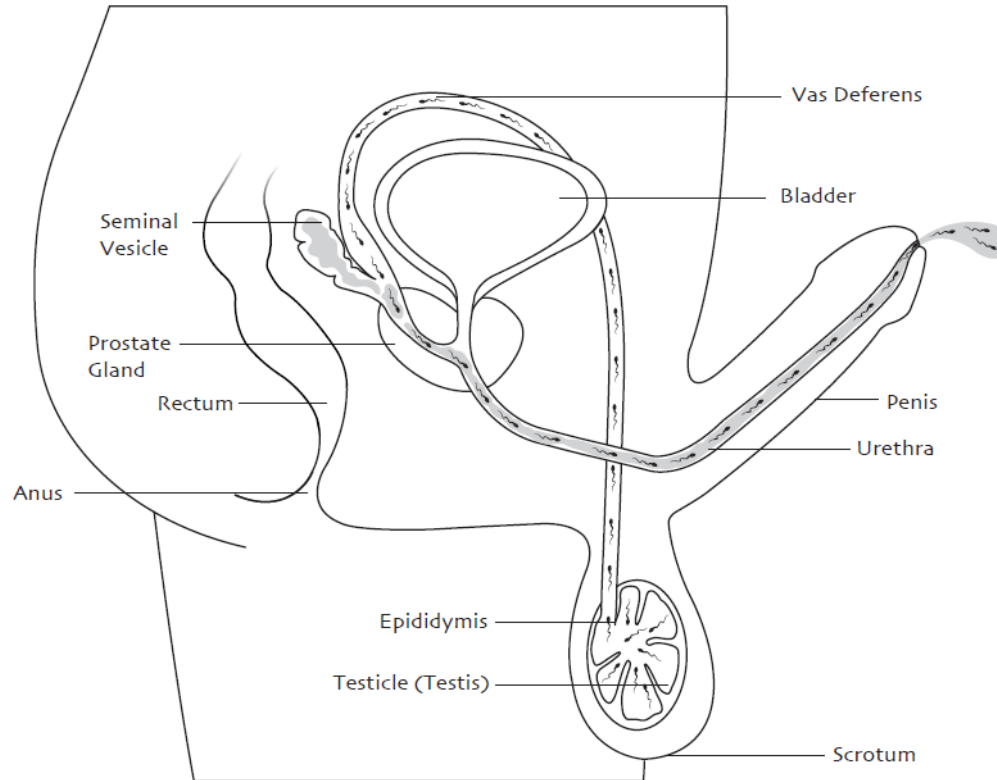


Ovum travels to uterus



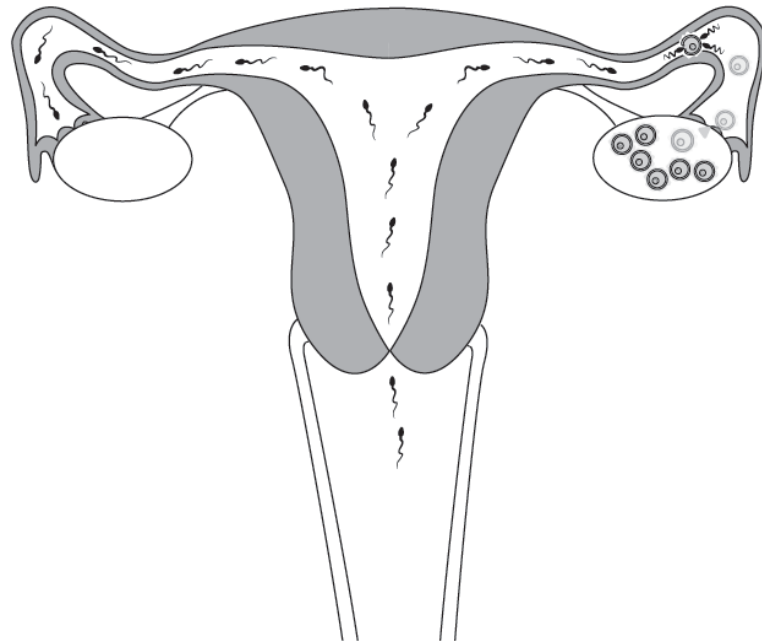
Beginning of next cycle  
(menstruation)

Sperm Production





## Conception



Adapted from *Sexuality: An Education Resource Book*, Canada: Globe/Modem Curriculum Press, page 234

