Learner Outcomes

W-5.3 Identify the basic components of the human reproductive system, and describe the basic functions of the various components; e.g. fertilization, conception

How To Use

This lesson plan contains several activities to achieve the learner outcome 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, but all can be used alone.

For a quick lesson, combine activities A, C, D and G.

Classroom Activities & Timing

A. Ground Rules (5-10 minutes)
B. Anatomy Vocabulary Matching Game (15-20 minutes)
C. Anatomy Diagrams (15-20 minutes)
D. The Egg’s Journey (20-30 minutes)
E. Class Discussion (5-15 minutes)
F. Eggs and Ovaries Kahoot! Quiz (15-20 minutes)
G. Question Box (5-10 minutes)

Required Materials

POSTERS: Anatomy Definitions
CARDS: Anatomy Vocabulary
HANDOUT and ANSWER KEY: Reproductive System Diagrams
HANDOUT: The Menstrual Cycle

See also the Differing Abilities lesson plans on Puberty and Reproduction.
Background Information for Teachers

Inclusive Language

Language is complex, evolving and powerful. In these lessons, inclusive language is used to be inclusive of all students, including those with diverse gender identities, gender expressions and sexual orientations. This includes the use of ‘they’ as a singular gender-neutral pronoun.

A person’s sex can be male, female or intersex (not clearly defined as either male or female). Sex is independent of gender identity. Gender identity is a person’s internal sense of identity as female, male, both or neither, regardless of their sex assigned at birth.

For many people, their gender matches the sex they were assigned at birth (cisgender). For others, their gender identity does not match the sex they were assigned at birth. They may use terms like transgender, trans, non-binary, gender fluid, gender queer, agender or others, to describe their gender identity. The umbrella term ‘trans’ is primarily used here, to describe people whose gender identity and sex assigned at birth differ. While this umbrella term does not fit everyone, the intention is to be inclusive as possible.

In these lessons, you will notice that body parts and processes are not labelled as male or female. While it is ok to use the terms boy/girl/male/female, it is important not to assume that all boys or girls have certain anatomy. This approach is more inclusive of intersex and gender diverse people.

The parts of the egg-producing reproductive system (anatomy)

External genitals

Vulva

- The vulva includes the labia majora, labia minora, clitoris, and the opening of the vagina.
- The labia majora and the labia minora are the outer and inner folds of skin surrounding the vaginal opening.
- The vulva has three openings: the anus, and the openings to the urethra and vagina. This is often surprising even to people who have this reproductive system, who think that the urethra and the vagina are the same passageway.
Grade 5 The Journey of an Egg

Clitoris
- The sex organ that becomes larger and firmer during sexual arousal.
- Located above the urethra.

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

Internal reproductive organs

Ovaries
- The egg-producing glands.
- These glands contain all the eggs (ova) from birth, and start releasing them after puberty begins.

Fallopian Tubes
- These are narrow tubes that connect the ovaries to the uterus.
- The egg travels through one of the tubes after ovulation.
- Fertilization occurs in the fallopian tubes.

Uterus
- The place where a baby can grow.
- Also sometimes called the womb.
- It is very low in the pelvis (nowhere near the stomach).
- It is about the size of a fist.
- The uterus (not the stomach) enlarges during pregnancy as the baby grows.
- During the menstrual cycle, the uterus grows a lining of blood that would nourish a growing fetus if fertilization and implantation occur. This lining sheds approximately once a month if fertilization and implantation do not occur.

Cervix
- The bottom of the uterus that opens into the vagina.

Vagina
- The passageway leading from the uterus to the outside of the body.
- Blood from the uterus passes through the vagina during menstruation.
- The baby passes from the uterus through the vagina during childbirth.
- The vagina is not used for urination. The urethra (the opening just above the vagina) is used for this purpose.
- Most people are born with a piece of tissue surrounding the vaginal opening. This is called the hymen – it may not be noticeable. Some people are born with an incomplete or flexible hymen. The hymen often wears away or becomes flexible during childhood.
- Once puberty begins, a person with a vagina may notice some discharge from the vagina on their underwear or toilet paper. It varies from whitish and pasty to clear and slippery. This means the body is starting to mature.
and periods will be starting. It is normal and keeps the vagina clean and healthy. If the discharge smells bad or the area is itchy, it could be a sign of infection and require medical treatment.

Other organs

Bladder
- The sac that holds the urine produced by the kidney.
- The bladder is part of the urinary system, not the reproductive system.

Urethra
- The tube through which urine passes from the body.
- It is the opening between the clitoris and the vagina.
- It is part of the urinary system, not the reproductive system.

How the reproductive system functions (physiology)

Eggs
- The eggs are produced in the ovaries. Each ovary contains about 250,000 eggs from birth.
- The egg is a cell which, when fertilized by a sperm cell, can create a baby.
- An egg is released once a month after puberty begins (ovulation). Occasionally two or more eggs are released.
- The egg travels down the fallopian tubes to reach the uterus.
- If the egg is not fertilized in a day or so, it dissolves.

Ovulation
- Once ovaries start producing hormones, messages are sent to the pituitary gland in the brain, which sends a message to the ovaries to release one egg, once a month from one ovary.
- Ovulation usually alternates from one ovary to the other each month.
- People can experience varying degrees of sensation during ovulation from nothing at all to pain similar to that of menstrual cramps.

Menstruation (Period)
- The uterus must prepare for growth of a baby each month, in case fertilization occurs.
- Hormones from ovaries send a message to the uterus to grow a thick, soft lining of tissue and blood.
- This lining contains nutrients that would be needed to nourish the fertilized egg.
- If the egg is not fertilized in the fallopian tube, the lining is not needed to nourish the baby, so the uterus will shed the lining.
- It takes 2 to 7 days to shed the lining. Five days is the average. This is called menstruation or having a period.
- Menstrual fluid is made up of mucous, blood and tissue from the uterine lining being shed.
Grade 5 The Journey of an Egg

- The average amount of menstrual fluid during a period is about 60-80 ml.
- Once the lining is completely shed, a new lining begins to grow.
- Soon, another egg is released. If fertilization does not occur, the egg dissolves and the lining is shed. This happens over and over again, which is why we call it the menstrual cycle.
- A cycle of 28 days is average; however it can vary from 24-38 days. For the first year or two, periods can be very irregular.
- Menstruation is a normal part of puberty. It is not dirty or bad.
- Some people experience cramping during menstruation which can be relieved using a hot water bottle, mild to moderate exercise, or over-the-counter pain medication. If cramping is extreme, it may be helpful to see a doctor.
- Menstruation is not a sickness. Participation in regular daily activities such as physical education class, active play and extra-curricular activities like gymnastics or soccer is encouraged.
- Personal hygiene is even more important during menstruation because oil secretions from hair and skin can increase and menstrual blood flow may get dried in pubic hair.
- Sanitary pads, tampons, period panties or menstrual cups are used to absorb menstrual blood. Teachers may want to use the Puberty Kit to demonstrate these products.
- People continue having periods until menopause. Most people experience menopause between 40 and 58 years of age. After menopause, a person no longer releases eggs or has periods and cannot become pregnant.

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

Students identify the basic components of the reproductive system, and can describe the basic functions of the various components.

1. Display the Anatomy Definitions posters around the room.
2. Divide students into teams of 3-4 students.
3. Distribute the Anatomy Vocabulary cards to each team.
4. Have teams decide which vocabulary word matches each definition, then post their word on the matching poster. Encourage groups to decide each
match on their own and not worry if they make a different choice than another group.

5. Review the correct definition-word matches as a class, and move vocabulary words to the correct definitions as needed.

Answer Key:

<table>
<thead>
<tr>
<th>Word</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anus</td>
<td>The opening at the end of the digestive tract where feces leave the body.</td>
</tr>
<tr>
<td>Bladder</td>
<td>A sac inside the body that holds urine.</td>
</tr>
<tr>
<td>Cervix</td>
<td>The bottom of the uterus that opens into the vagina.</td>
</tr>
<tr>
<td>Clitoris</td>
<td>Sex organ that becomes larger and firmer during sexual arousal.</td>
</tr>
<tr>
<td>Fallopian Tubes</td>
<td>Tubes connecting the ovaries to the uterus. The egg travels through here after ovulation.</td>
</tr>
<tr>
<td>Hymen</td>
<td>A membrane that surrounds or partially covers the opening to the vagina.</td>
</tr>
<tr>
<td>Menstruation (Period)</td>
<td>Monthly shedding of the lining of the uterus.</td>
</tr>
<tr>
<td>Ovaries</td>
<td>Glands that produce and release an egg each month.</td>
</tr>
<tr>
<td>Ovulation</td>
<td>Process of releasing an egg from the ovary.</td>
</tr>
<tr>
<td>Egg</td>
<td>The reproductive cell made in the ovaries.</td>
</tr>
<tr>
<td>Vagina</td>
<td>A passage leading from the uterus to the outside of the body.</td>
</tr>
<tr>
<td>Vulva</td>
<td>The external genitals, includes the labia and clitoris.</td>
</tr>
<tr>
<td>Urethra</td>
<td>Urine passes through this tube to the outside of the body.</td>
</tr>
<tr>
<td>Uterus</td>
<td>Where a developing baby grows.</td>
</tr>
</tbody>
</table>
C. Anatomy Diagrams

The diagrams of anatomy help students learn the vocabulary associated with reproduction. Students may need help understanding the difference between the internal and external, or side and anterior views of the reproductive systems. Showing the diagrams that orient the internal organs inside the body help students understand what the diagrams represent.

1. Distribute the Reproductive System diagrams handout. Explain the relationship between the external and internal views of the reproductive system.

2. Ask the students to fill in as many of the blanks as they can. You may wish to have the students work individually, in pairs, or in their small groups from the previous activity. Emphasize that they may not know all the answers and that is ok.

3. Display the correct answers so all students can assess and correct their diagrams and discuss.

4. Consider asking the students to consider which parts of the anatomy they think are the same in all people, or which might have similar functions.

D. The Egg’s Journey

This activity builds on the students’ understanding on reproductive anatomy and links the anatomy to the physiology of how the reproductive system functions.

1. Distribute the Egg’s Journey handout.

2. Have students complete the activity by filling in the blanks with the appropriate terms. This activity can be done individually or using a small group technique such as think-pair-share.

3. You may wish to provide resources such as the Reproductive System diagrams handout if students do not have them from the previous activity. You can also hand out or display the Menstrual Cycle diagram. The diagram shows a cycle of 28 days, which is the average. A normal cycle can be anywhere from 24-38 days long.

4. Correct the handout together.

Answers

1. uterus
2. egg
3. ovary

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E. Class Discussion

Students review their knowledge of the reproductive system and menstrual cycle, develop resiliency skills around anatomy issues, and identify support people.

Discuss the following questions as a class:

**How does a person know when they will get their first period?**
- Menstruation usually begins around the ages of 9 to 15. Every person has their own internal clock that determines when the events of puberty begin.
- Generally, a female/person with a uterus can expect their first period about 2 years after breasts first start to develop, and soon after there is some hair under the arms and in the pubic area.
- Vaginal discharge is a sign that menstruation may begin soon.

**What are some of the things that might worry a person about menstruation?**
- Cramps
- Blood
- Smelling different
- Premenstrual syndrome (PMS)
- Getting their period unexpectedly, not having supplies available

**What are some ways to cope with menstruation?**
- Use pads, tampons, period panties or a cup for menstrual flow.
- Various sizes of pads, tampons, period panties and cups are available. Unscented ones are less likely to cause skin irritation.
- Check with an adult before using tampons or a cup for the first time and be sure to read the instructions.
- Tampons need to be changed every 3-4 hours. Cups need to be changed every 6-12 hours. Pads need to be changed before they are soaked through, which will depend on the thickness of the pad and the menstrual flow.
- Wash your hands after handling pads, tampons or cups.
- To relieve cramps, try a hot water bottle, pain medication or moderate exercise. If severe cramps persist, it may be helpful to see a doctor.
- PMS (premenstrual syndrome) can occur any time in the two weeks before menstruation. It can make a person feel moody, irritable or have tender breasts or bloating. Exercising and limiting caffeine and salt can help minimize the symptoms of PMS.
Grade 5 The Journey of an Egg

- If your period starts at school and you don’t have supplies, ask a friend, teacher or the office staff. Once you have started getting your period, keep menstrual supplies in your backpack, desk or locker to be prepared.

What do you think is the most interesting thing about the menstrual cycle?

We have studied what happens when an egg is unfertilized. What if a sperm had fertilized the egg while in the fallopian tube?
- If the egg is fertilized, it may implant in the uterine lining (implantation). This could result in a pregnancy.
- Inform students that they will learn more about pregnancy and fetal development in grade 6.

What needs to happen before a person is able to have a baby?
- A person needs to ovulate and a sperm cell needs to fertilize the egg in order to produce a baby.
- Because a person will ovulate before their first menstrual bleed, it is possible to become pregnant even if they have never had a period, if they have vaginal sex.

If you have questions about anatomy or physiology, puberty changes or sexuality, who can you ask?
- Parent
- Trusted adult
- Teacher or guidance counsellor
- Health care provider

F. Eggs and Ovaries Kahoot! Quiz

This quiz can be a great review, wrap-up of the unit, or a fun energizer in between other activities. For more information on using Kahoot!, visit getkahoot.com

1. Open the Kahoot! Quiz: Grade 5 Eggs and Ovaries

2. As a class, answer the quiz questions and discuss the answers together. You can play the quiz in individual or team mode.

G. Question Box

Answer any questions from the question box in the previous lesson. Have students submit any new questions and address them next class.

Addressing the questions at the next class allows you time to review the questions and prepare responses.
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 parts of the reproductive system using scientific terminology?
- describe the basic functions of the various parts of the reproductive system?
- describe the menstrual cycle?

Skills:

- participate in class discussion and exhibit appropriate listening and speaking skills?
- discuss coping skills around puberty issues?
- identify support people?

Attitudes:

- demonstrate awareness and understanding of the changes that occur during puberty?
- demonstrate acceptance that menstruation is a normal part of puberty and maturation?
- recognize that ovulation and menstruation could lead to pregnancy?
The opening at the end of the digestive tract where feces leaves the body.
A sac inside the body that holds urine.
The bottom of the uterus that opens into the vagina.
Sex organ that becomes larger and firmer during sexual arousal.
Tubes connecting the ovaries to the uterus. The egg travels through here after ovulation.
A membrane that surrounds or partially covers the opening to the vagina.
Monthly shedding of the lining of the uterus.
Glands that produce and release an egg each month.
Process of releasing an egg from the ovary.
The reproductive cell produced in the ovaries.
A passage leading from the uterus to the outside of the body.
The external genitals, includes the labia and the clitoris.
Urine passes through this tube to the outside of the body.
Where a developing baby grows.
Anus
Bladder
Cervix
Clitoris
Egg
Fallopian Tubes
Hymen

Menstruation

Ovaries

Ovulation

Vagina

Vulva
Urethra

Uterus
Reproductive System
Answer Key
This diagram shows an average menstrual cycle that is 28 days long. Cycles can vary in length from 24-38 days.
Read the following story and fill in the blanks using the words provided.

**Word Bank**
- cervix
- fallopian tubes
- menstrual cycle
- ovary
- egg
- uterus
- vagina

Once upon a time, there was a reproductive system. Each month, due to changes in hormones, the ___________________ (1) invited a thick, soft lining made up of tissue and blood to grow along its walls. The lining contained nutrients that would be needed to nourish a growing baby if a pregnancy was to occur. Once the lining had grown, it waited for the ovaries to do their job.

The ovaries contained special reproductive cells, each cell called an _____________ (2). Each month, one of these cells would reach maturity and be released from the _____________ (3).

This month, it was the right ovary that got to release an egg. The left one would have to wait until the next month. The _______________ __________ (4), which wait for the ovaries to release an egg, waved their numerous arms. The waving arms grabbed the egg that was just released and gently guided it into one of the tubes. After about a day of travel, the egg began to dissolve. When it had disappeared, the brain sent a message to the lining of the uterus telling it that a fertilized egg wasn’t going to arrive, so it could leave the uterus. Slowly, the lining passed through the _______________ (5), into the _______________ (6), and out of the body.

As soon as the lining was gone, the uterus invited a new lining to start to grow. This time around, it would be the ovary and fallopian tube on the left that would do all the work. Then, the process would start all over again. This process is called the _______________ __________ (7).
Kahoot! Quiz Answer Key

ANSWER KEY: Grade 5 Eggs and Ovaries

Correct answers are in bold text.

1. The internal parts of the egg-producing reproductive system include:
   - the vulva, clitoris and anus
   - **the uterus, ovaries and fallopian tubes**
   - the bladder, urethra and uterus
   - the vulva, vagina and ovaries

   The vulva and clitoris are external, not internal parts of the reproductive system. The anus is part of the digestive system and the bladder and urethra are part of the urinary system.

2. The external parts of the egg-producing reproductive system include:
   - urethra, vagina, and clitoris
   - fallopian tubes, labia major and labia minor
   - **labia minor, labia major and clitoris**
   - uterus, urethra and vagina

   The vagina, fallopian tubes and uterus are all internal parts of the reproductive system. The urethra is part of the urinary system.

3. The place where a baby grows is called the:
   - stomach
   - vagina
   - ovaries
   - **uterus**

   While the sperm meets the egg in the fallopian tubes, the baby grows and develops in the uterus for the remainder of the pregnancy.

4. The eggs are produced and stored in the:
   - uterus
   - fallopian tubes
   - **ovaries**
   - cervix

   All the eggs a person will have are already in the ovaries, when that person is born. The ovaries each hold about 250,000 eggs at birth.

5. On average an ovary will release:
   - **one egg each month**
   - one egg each year
   - one egg each time the person has sex
   - seven eggs each month

   This number is based on an average menstrual cycle of 28 days. Menstrual cycles can range in length from 24-38 days. It is common for cycles to be irregular for the first few years.
6. Menstruation is:
   - the release of an egg from the ovary
   - the shedding of the uterine lining each month
   - only necessary if there is a fertilized egg in the uterus
   - a normal and healthy part of growing up

   Menstruation is the shedding of the uterine lining; it is a normal process for anyone with a uterus.

7. People who get cramps during menstruation (their period) should:
   - avoid all exercise
   - try a hot water bottle to relieve cramps
   - continue to do their daily activities
   - try exercising to relieve cramps

   Cramps are a common experience for many people while menstruating. Finding the solution that works for each person can take time. If these common measures do not help, see a health care provider.

8. An egg travels from the:
   - ovary through the uterus into the fallopian tubes
   - ovary through the fallopian tubes into the uterus
   - testes through the vas deferens into the urethra
   - ovary through the vagina into the cervix

   The egg will then either pass out of the body, via the vagina, during menstruation, or remain in the uterus if fertilized, and develop into a baby.

9. The average length of a menstrual cycle is
   - 1 year
   - 1 week
   - **28 days**
   - 7 days

   This number is an average. Menstrual cycles can range in length from 24-38 days. It is common for cycles to be irregular for the first few years.

10. The menstrual cycle includes:
    - **ovulation, thickening and shedding of the uterine lining**
    - ejaculation, fertilization, implantation
    - ovulation, fertilization, implantation
    - fertilization, thickening and shedding the uterine lining

    Fertilization and implantation are part of pregnancy, not menstruation. Ejaculation is part of the sperm production/reproduction process.