

Lesson 4: Reproduction

Curriculum Expectations

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 expectation 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 B, C and E.**



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. An Egg Meets a Sperm (20 minutes)
- C. Step-by-Step Reproduction (15 minutes)
- D. Reproduction Crossword (20 minutes)
- E. Question Box (10 minutes)

Required Materials

- Handout and Answer Key: An Egg Meets a Sperm
- Cards: Step-by-Step Reproduction
- Handout and Answer Key: Reproduction Crossword

*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

This lesson focuses on the biological process of reproduction. While families can be created in many ways – such as through adoption, fostering, in vitro fertilization (IVF), and surrogacy – this lesson focuses on natural biological reproduction.

Educators should approach this subject with sensitivity, acknowledging the diversity of family structures and experiences. This lesson builds on previous content about menstruation and spermatogenesis, laying the foundation for understanding how reproduction leads to the creation of new life.

Inclusive language

Language is complex, evolving, and powerful. These lessons use [inclusive language](#) to accommodate all students, including those with diverse gender identities, expressions, and orientations. This includes using 'they' as a singular gender-neutral pronoun. This approach ensures the lessons are accurate and inclusive, promoting understanding and respect for all students.

In these lessons, you will notice that body parts and processes are not labelled as male or female. While it is acceptable to use the terms boy/girl/male/female when talking to or about individuals, it is important not to assume that all boys or girls have certain anatomy, and to consistently use inclusive language. Learning to discuss anatomy without gendering people, parts or processes is a shift for many people. These lessons use language that can help you and your students make this shift, so that everyone, including people who are intersex and gender diverse, are included and feel seen.

Cultural sensitivity

People's decisions and behaviours related to one's sexuality are influenced by their cultural beliefs, values and practices. It is important to acknowledge our own personal cultural values and beliefs while respecting that others may not share the same ones.

Instructional methods

Students engage when [instructional methods](#) emphasize active and experiential learning. Just as in other curriculum areas, using role play, small groups, class discussion and videos in sexual health education can bring the curriculum to life. It also helps students explore the content and understand how it relates to their own ideas, values and experiences.

Glossary

This [glossary](#) provides simple definitions of key terms used throughout our lessons and resources, allowing educators to have a clear understanding of concepts related to health, human development, sexuality and inclusivity.

Understanding the basics: Reproduction

Human reproduction biological processes

- **Fertilization**
 - When a sperm cell and an egg cell meet, fertilization happens. Sperm are tiny cells made in the testes, and eggs are cells made in the ovaries. Sperm can swim to find an egg in the fallopian tube. If one sperm enters an egg, the two combine, creating the very first cell of a new person. This cell is called a zygote.
- **Implantation**
 - After fertilization, the zygote begins to divide into more cells and moves down the fallopian tube to the uterus. About 5-7 days later, the zygote attaches to the lining of the uterus. This is called

implantation, and it's the start of pregnancy. At this stage, the group of cells is called an embryo.

A step-by-step diagram of **conception** is provided after the lesson (and in the [slideshow](#)) for reference.

*Many students are curious about topics related to reproduction. This information may help answer common questions:

- **Twins:**
 - Occur when two babies are born at the same time. There are two types of twins:
 - Identical twins (monozygotic): They come from the same fertilized egg that splits into two. They share the same DNA, so they usually look very similar.
 - Fraternal twins (dizygotic): They come from two different eggs and two different sperm. They can look different from each other, just like regular siblings.
- **Infertility:**
 - Some people might not be able to have a baby due to medical reasons, such as:
 - Their bodies may not produce the cells (like eggs or sperm) needed for pregnancy.
 - They may have conditions that make it difficult or impossible for their body to carry a baby.
 - Sometimes people who can't get pregnant choose other ways to have children, like adoption, surrogacy or using medical treatments (e.g. in vitro fertilization).

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. An Egg Meets a Sperm

This story explains the relationship between sperm production, ovulation, and pregnancy. It walks through the stages of fertilization and implantation, providing a detailed explanation of how each step fits into the reproduction process.

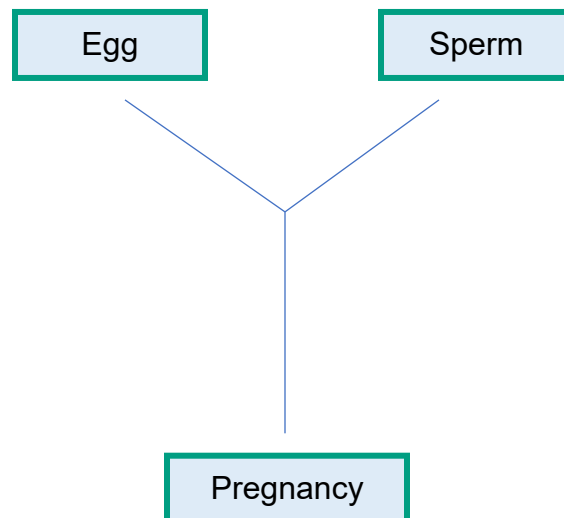
1. Distribute the “**An Egg Meets a Sperm**” handout to students.

2. Guide students through the process of sperm production and ovulation, then continue the story with fertilization and implantation. Encourage students to follow along with their handouts and complete the fill-in-the-blank sections as you review each step.

C. Step-by-Step Reproduction

In this activity, students demonstrate their understanding of the components of the human reproductive systems and the process of reproduction. Completing Activity B beforehand is recommended to make this activity easier and more effective.

1. Print the Step-by-Step Reproduction cards. Consider laminating them for durability and reuse.
2. Use masking tape to create a large 'Y' shape on the floor. As seen below, label:
 - One arm of the 'Y' as **Egg**.
 - The other arm as **Sperm**.
 - Place the **Pregnancy** card at the end where the arms of the 'Y' meet.
3. Randomly distribute the remaining cards to the students.
4. Have students work collaboratively to place the steps in the correct order along the 'Y' path. If Activity B was completed, encourage students to refer to their "**An Egg Meets a Sperm**" handout as a guide.
5. Once all cards are placed, review the arrangement as a group using the answer key to ensure accuracy.



Answers

Egg

1. The lining of the uterus thickens with blood.
2. Ovulation occurs (an egg is released from the ovary).
3. The egg enters the fallopian tube.

Sperm

1. Sperm are produced in the testicles.
2. Sperm exit the testicles and travel up the vas deferens.
3. Sperm cells mix with semen.

Pregnancy

1. Sperm cells leave the penis (ejaculation) and enter the vagina.
2. Sperm travel through the cervix, uterus, and into the fallopian tubes.
3. One sperm cell joins with an egg (fertilization), forming a single cell called a zygote.
4. The zygote begins dividing into more cells.
5. The zygote travels through the fallopian tube to the uterus.
6. The zygote attaches to the wall of the uterus (implantation).

C. Reproduction Crossword

Use the crossword puzzle as a homework assignment, assessment option, or just a fun activity to wrap up the lesson.

1. Give each student a copy of the crossword.
2. Students may choose to work with a partner to complete the crossword.

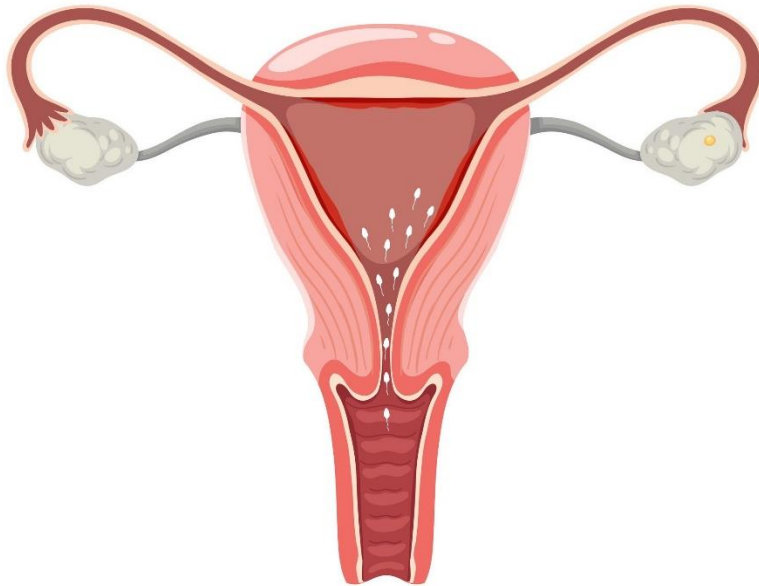
D. Question Box

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

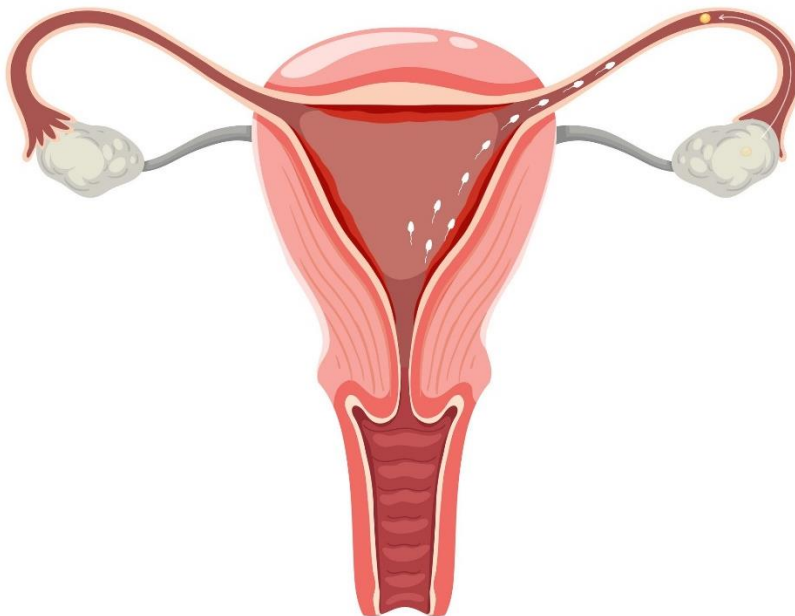
Addressing the questions at the next class allows you time to review the questions and prepare responses.

Conception

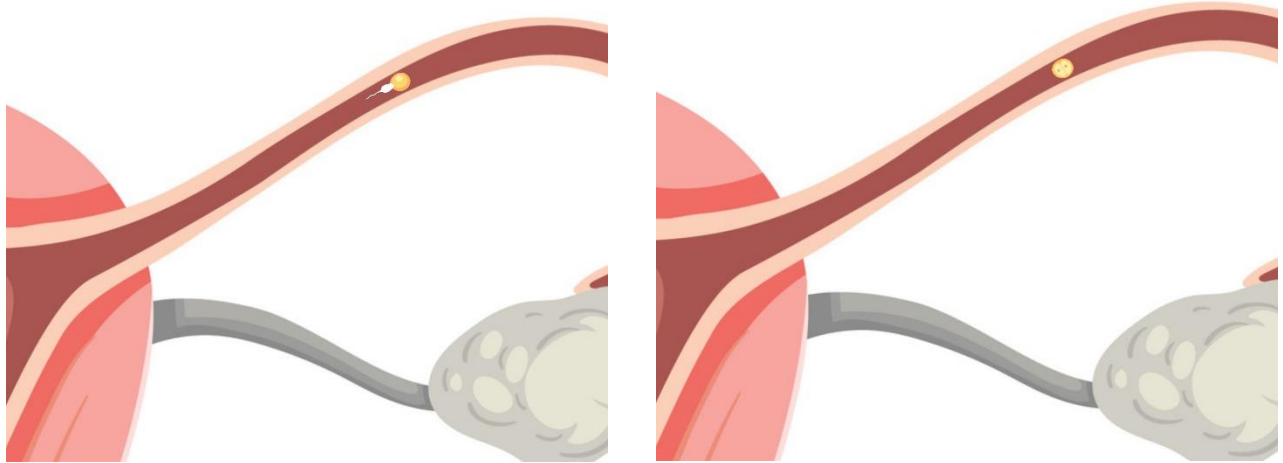
1 Sperm transport



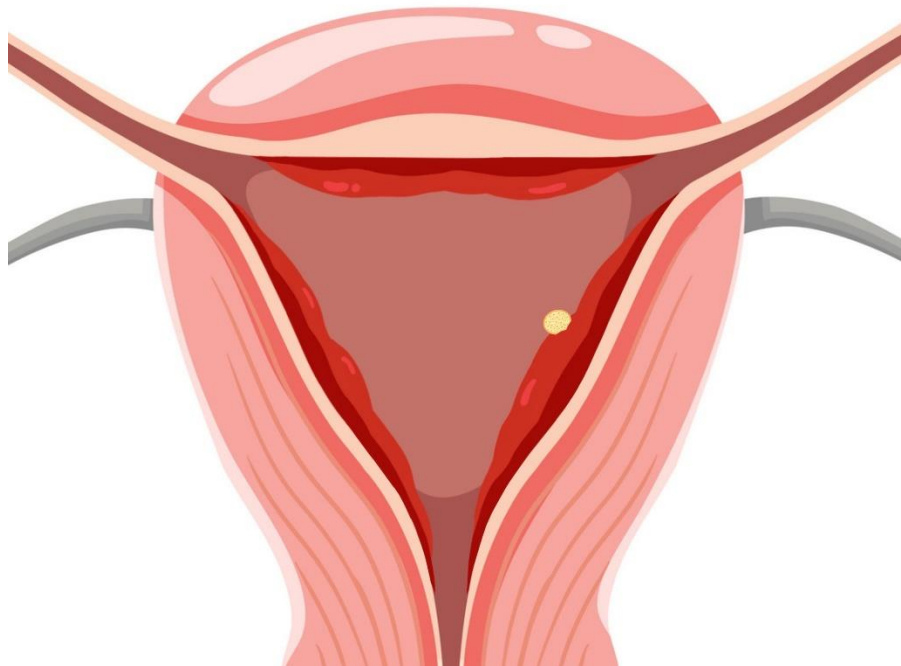
2 Egg transport



3 Fertilization



4 Implantation



An Egg Meets a Sperm

Fill in the blanks, using the words below:

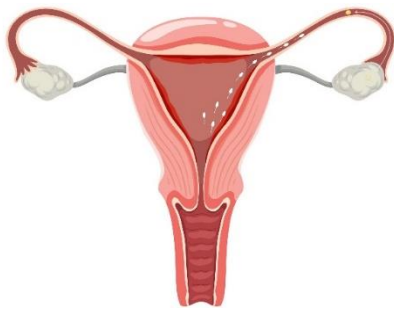
baby	fallopian tube	egg	fertilization	implantation	ovary
ovulation	semen	testicle	vas deferens	zygote	

Once upon a time, there were two special cells: a sperm cell and an egg. These cells had important jobs to do. The sperm cell was made and stored in a _____ (1) where millions of sperm are produced every day. The _____ (2) was stored in an ovary, where it waited for the right time to be released.

The sperm cell began its journey when it left the testicle, travelling through a long tube called the _____ (3). Along the way, it mixed with other fluids, creating _____ (4). This substance helps the sperm swim and gives it nutrients it needs for its big journey.



Meanwhile, the egg was getting ready too. During a process called _____ (5), the egg matured and was released from the _____ (6) into the _____ (7).



The sperm cells travelled through the uterus and into the fallopian tube, where they hoped to find the egg. Hundreds of millions of sperm started the journey, but only a few made it to the fallopian tube. Finally, one sperm reached the egg and broke through its outer layer. This amazing moment is called _____ (8).

After fertilization, the egg and sperm combined to form a single cell called a _____ (9). The zygote began to divide into more cells as it travelled down the fallopian tube to the uterus. When it reached the uterus, it attached to the lining. This is called _____ (10).

From there, the zygote continued to grow and develop, starting the journey of becoming a _____ (11).



Answer Key: An Egg Meets a Sperm

Fill in the blanks, using the words below:

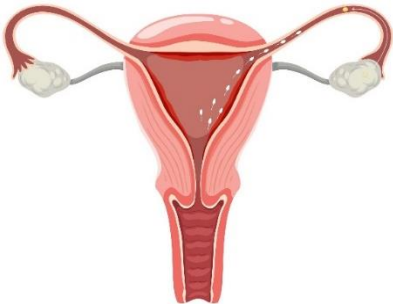
Baby	Fallopian tube	Egg	Fertilization	Implantation	Ovary
Ovulation	Semen	Testicle	Vas deferens	Zygote	

Once upon a time, there were two special cells: a sperm cell and an egg. These cells had important jobs to do. The sperm cell was made and stored in a **testicle** (1), where millions of sperm are produced every day. The **egg** (2) was stored in an ovary, where it waited for the right time to be released.

The sperm cell began its journey when it left the testicle, travelling through a long tube called the **vas deferens** (3). Along the way, it mixed with other fluids, creating **semen** (4). This substance helps the sperm swim and gives it nutrients it needs for its big journey.



Meanwhile, the egg was getting ready too. During a process called **ovulation** (5), the egg matured and was released from the **ovary** (6) into the **fallopian tube** (7).



The sperm cells travelled through the uterus and into the fallopian tube, where they hoped to find the egg. Hundreds of millions of sperm started the journey, but only a few made it to the fallopian tube. Finally, one sperm reached the egg and broke through its outer layer. This amazing moment is called **fertilization** (8).

After fertilization, the egg and sperm combined to form a single cell called a **zygote** (9). The zygote began to divide into more cells as it travelled down the fallopian tube to the uterus. When it reached the uterus, it attached to the lining. This is called **implantation** (10).

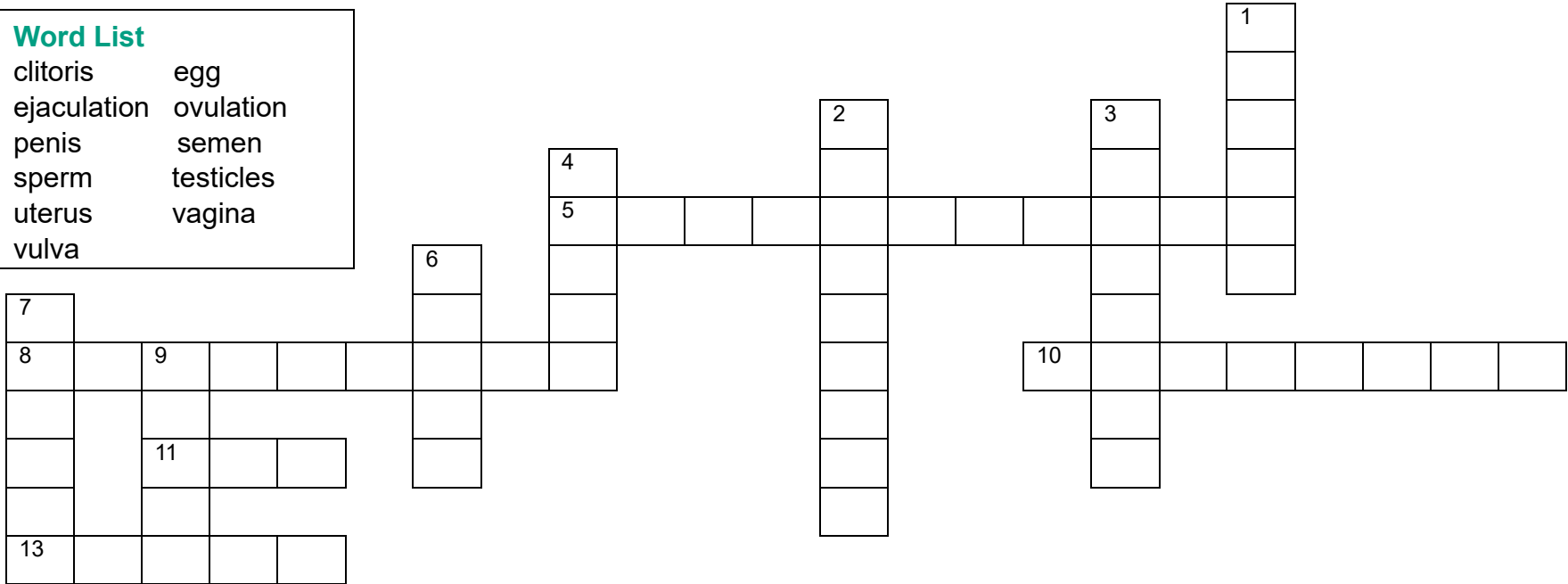
From there, the zygote continued to grow and develop, starting the journey of becoming a **baby** (11).



Name: _____

Reproduction Crossword

- | Word List | |
|-------------|-----------|
| clitoris | egg |
| ejaculation | ovulation |
| penis | semen |
| sperm | testicles |
| uterus | vagina |
| vulva | |



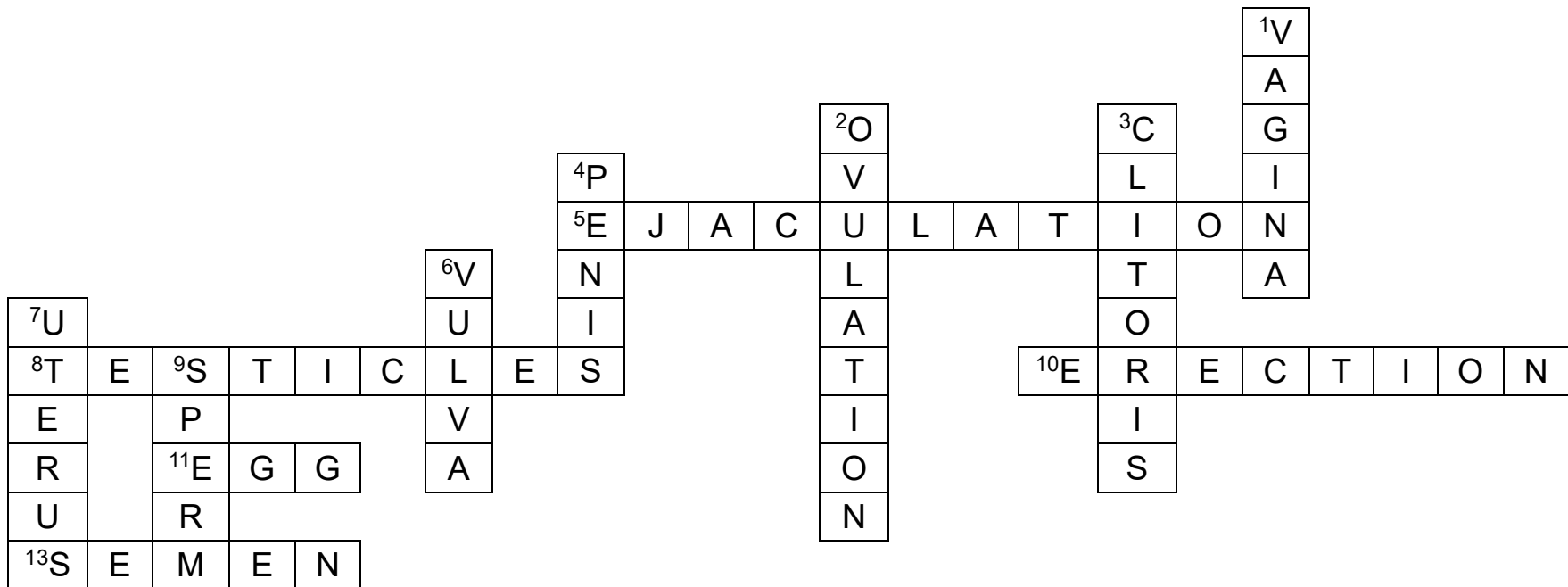
Across

- 5. Release of semen from the penis
- 8. Glands that produce sperm
- 10. When the penis gets larger and firmer
- 11. Reproductive cell made in the ovaries
- 13. Sticky whitish fluid that contains sperm

Down

- 1. Path from the uterus to the outside of the body
- 2. Release of the egg from the ovary
- 3. Organ above the vagina that becomes larger and firmer when stimulated
- 4. Organ attached to the scrotum that becomes larger and firmer when stimulated
- 6. External genitals including the labia and clitoris
- 7. Where the fetus grows and develops before birth
- 9. Reproductive cell made in the testicles

Answer Key: Reproduction Crossword



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5. Release of semen from the penis
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Eggg

The lining of the
uterus thickens
with blood

Ovulation occurs

(egg released from the ovary)

The egg enters
the fallopian
tube

Sperm

Sperm are
produced in the
testicles

Sperm exit the
testicles and
travel up the
vas deferens

Sperm cells mix with semen

Pregnancy

Sperm cells leave
the penis
(ejaculation) and
enter the vagina

Sperm travel
through the cervix,
uterus, and into
the fallopian tubes

One sperm cell joins
with an egg
(fertilization),
forming a single cell
(zygote)

The zygote
begins dividing
into more cells

The zygote travels
through the
fallopian tube to
the uterus

The zygote
attaches to the
wall of the uterus
(implantation)