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Sexuality Education Lesson Plans

REPRODUCTION





ABOUT THIS LESSON . . .



This lesson plan is part of a set of individual, scripted lesson plans available to support in-school or out-of-school delivery of comprehensive sexuality education (CSE) to educate young and middle adolescents about sexual and reproductive health. The scripted lesson plans are designed to incorporate use of AMAZE educational videos that address the lesson plan topics and can be used to supplement existing lesson plans or resources that you may already be using in the delivery of CSE.

Ideally, learning about any specific CSE topics should provide learners with the opportunity to develop, apply and practice learning in the domains of knowledge, skills and attitudes. In these lesson plans we provide as an example, only a few of the primary learning outcomes that could be targeted, recognizing that a single lesson is often not enough to achieve mastery of any one learning outcome or adequately cover more than one learning domain. Teachers are encouraged to schedule and deliver follow-up lessons that reinforce intended learning outcomes of these lessons/CSE topics, and to take advantage of other opportunities both in, and outside the classroom that enable learners to reflect on attitudes and practice and reinforce a skill.



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International Technical Guidance on Sexuality Education Alignment

Key Concept 6: The Human Body and Development

- Topic 6.1: Sexual and Reproductive Anatomy and Physiology
- Topic 6.2: Reproduction

Prior Student Knowledge

Students have learned about male and female internal and external genitalia and their basic function.

Target Age-Range

Ages 10-14+

Time

45 minutes

TEACHER PREPARATION:

- Review teacher resources and become familiar with the functioning of the reproductive system and human reproduction and be prepared to respond to questions.
- Print out the Steps to Human Reproduction Cards and cut them out. Make enough sets for each small group.
- Print out "Worksheet: Human Reproduction," one copy per student.
- Print out "Resource: Sexual and Reproductive Anatomy," one copy per student.
- Write down the content of the word bank on the blackboard.
- Access and preview the AMAZE Pregnancy and Reproduction Explained video to be familiar with the content and sure that you are comfortable showing it in class.
- Test playing the video so that it's ready to view during the lesson, either queued up to the start (to avoid ads) on YouTube, off of an **AMAZE playlist** (https://amaze.org/my-amaze/?utm_source=Amaze&utm_medium=HomePage&utm_campaign=MyAmazeButton/), or a downloaded version. Consider using the YouTube Playback Speed function to adjust the speed of the video to what's best for your students.

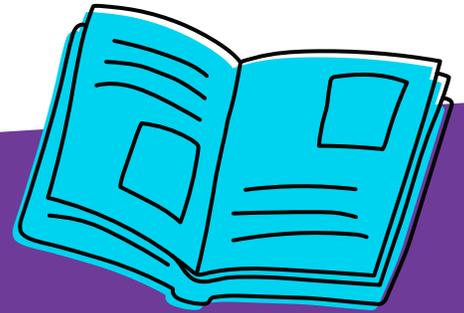
MATERIALS NEEDED:

- Projector and screen, or laptop, tablet (if there's limited Internet connection, download the video ahead of time).
- Video link: <https://amaze.org/video/pregnancy-reproduction-explained/>
- PowerPoint: Sexual and Reproductive Anatomy (or existing posters from biology or other relevant class if preferred/available)

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- Teacher's Resource: Word Bank and Answer Key on Sexual and Reproductive Anatomy
- Teacher's Resource: Reproduction Frequently Asked Questions
- Resource: Sexual and Reproductive Anatomy (for the teacher and one copy per student)
- Steps to Human Reproduction Cards – one set for each small group
- Worksheet: Human Reproduction
- Teacher's Resource: Human Reproduction Answer Key
- Chalk and blackboard or Flip Chart Paper and pen



LEARNING OBJECTIVES:

By the end of this lesson, students will be able to:

- 1. Describe how puberty prepares the human body for the potential to reproduce.** (Knowledge)
- 2. Describe the process of human reproduction by identifying the correct order of steps involved in conception.** (Knowledge)



PROCEDURE:

Step 1

Tell students that today you are going to discuss how puberty can prepare the human body for the potential to reproduce. Ask, “Who remembers what puberty is?”



Note to the Teacher: Answers might include a normal part of growing up when our bodies change from being a child’s body to an adult’s body. Remind students that puberty typically begins anywhere from age 8 to 16 – usually a little earlier for girls than boys – and continues all the way until a person reaches their full adult height in the late teens for girls and early twenties for boys.

Say, “One of the biggest differences between a person who has gone through puberty and somebody who has not is the ability to reproduce, or make a baby. That is an important change that happens during puberty. The main changes that happen during puberty are the result of hormones, testosterone and estrogen mainly. Hormones are the natural chemicals our bodies make.”

(3 minutes)

Step 2

Start the PowerPoint with slide one and say, “To understand reproduction, let’s first review the names of the male reproductive body parts and their functions. Who can name one of the male body parts in this diagram?” Together with the students, seek answers to name the parts on the diagram and also reference the function of each part.



Note to the Teacher: You may want to provide a word bank on the blackboard to help students to remember the names. Refer to the Word Bank and Answer Key on Sexual and Reproductive Anatomy for words and answer key.

Next, show slides two and three of the female body and say, “Next, let’s review the names and functions of the female reproductive body parts. Who can name one of the female body parts in this diagram?” Together with the students, seek answers and name the parts on the diagram and also reference the function of each part.

(10 minutes)



Step

3

Tell students, "Puberty starts because a person's body starts to produce a very large quantity of hormones that they were only produced in small amounts before. Boys start to produce a lot more testosterone and a little bit of estrogen and girls start to produce a lot more estrogen and a little bit of testosterone. All of these changes happen because of the new surge of these hormones." Show students slide four that has both the male and female interior diagrams on it together. Explain to students that only some of the male and female body parts are needed for reproduction and therefore are part of the reproductive system. Say, "On the male diagram, the parts that are used in reproduction are the testicles, penis, urethra, and vas deferens." Say, "On the female diagram, the parts that are used in reproduction are the uterus, ovaries, fallopian tubes, and vagina."

(4 minutes)

Step

4

Tell students, "Through the production of testosterone and estrogen, the reproductive system becomes able to reproduce or make a baby." Say, "When puberty begins, testicles, which is where most of the hormone testosterone is produced, start to produce sperm. Sperm are tiny cells that are needed to reproduce. For reproduction to happen, the sperm exit the testicles and then go to the epididymis, where they mature, and then travel up through the two small tubes called the vas deferens. After they pass through the vas deferens, the sperm cells mix with semen. Semen is a fluid that helps to protect and nourish the sperm and make them able to fertilize an egg. After the sperm mix with the semen, they travel up through the urethra in the penis and out of the tip of the penis. This is called an ejaculation."

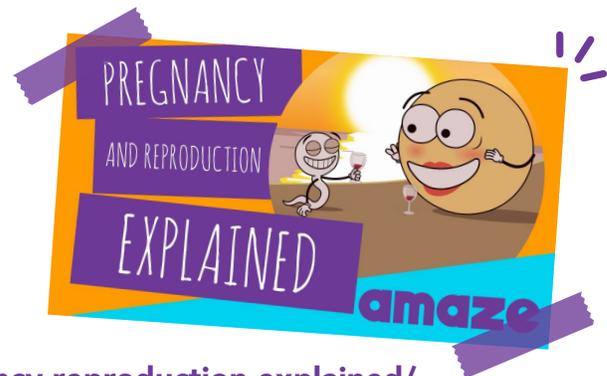
Next say, "When puberty begins, ovaries, which produce most of the hormone called estrogen, start to release an egg, called an ovum, about once a month. The process of the ovary releasing an ovum is called ovulation. When ovulation occurs, the egg or ovum enters the fallopian tube. (Remind students that once ovulation begins, each month, the uterus starts to prepare for a fertilized ovum because if a person becomes pregnant, the uterus is where the fetus will live and grow until it is born.) So, every month, the lining of the uterus thickens with extra blood and tissue. Conception, or reproduction, can happen generally happens when the semen containing hundreds of millions of sperm cells leaves the penis (ejaculation) and enters the vagina through sexual intercourse. If no fertilized egg comes down to the uterus, which is most months, then the uterus sheds its lining, which flows out of the body through the vagina and this is called menstruation or having a period."

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Then, tell them that you are now going to show them a video that explains how conception occurs. Play the two and a half minute AMAZE video **Pregnancy and Reproduction Explained**:

<https://amaze.org/video/pregnancy-reproduction-explained/>
(12 minutes)



Note to the Teacher: It is likely that some students will react with embarrassment, discomfort, or even disgust to the mention of sexual intercourse. Explain to students that this is an adult behavior and that it is normal and that as they are very young, it's okay to feel a bit uncomfortable or silly as we're talking about it.

Step 5

Tell students that they are now going to see what they remember about conception by placing the steps of conception in the right order on a diagram. Break up students into pairs or trios. Give each group a conception worksheet and a stack of cards or slips of paper with the steps of conception on them. Explain to students that on the part of the "Y" marked "Male," they are to put the cards relating to the male part of reproduction in the correct order starting from the top (the first step is already there to help them). On the part of the "Y" marked "Female," they are to put the cards relating to the female part of reproduction in order following the first step. As students work on their diagrams, go around and offer assistance or clues to help them. (Alternatives: Depending on the need to assess students, this activity can be done independently so the teacher can assess students on an individual basis. Another option is to do this as a large group activity with the whole class. In such a situation, the teacher can make a giant diagram on the floor with chalk and enlarge the signs to have the class build a giant conception diagram).

(10 minutes)

Step 6

Review the diagrams, correcting mistakes and reviewing information. With any time remaining, ask students if they have any questions. Take as much time as possible to respond to their questions. Close by summarizing that during puberty, the body prepares itself to be able to reproduce by releasing hormones called testosterone and estrogen. Conception, or reproduction, generally happens when a sperm fertilizes an egg and implants in the uterus.



Tell students that it is okay if they still have more questions and that they can always ask a trusted adult or come to you or to the school nurse for more information. Lastly, distribute copies of the Resource: Sexual and Reproductive Anatomy, letting students know that they can refer to the handout to remember the different body parts and their functions.

(6 minutes)

KEY SUMMARY POINTS:

- During puberty, the body releases hormones called testosterone and estrogen, which help the body get ready to be able to reproduce.
- When puberty begins for boys, their testicles, which is where most of the hormone testosterone is produced, start to produce sperm. When puberty begins for girls, their ovaries, which produce most of the hormone called estrogen, start to release an egg, called an ovum.
- Conception, or reproduction, generally happens when a sperm fertilizes an egg and implants in the uterus.

OPTIONS FOR ASSESSMENT OF LEARNING OBJECTIVES UPON CONCLUDING THE LESSON:

The activity in step five can be used to assess the learning objectives of the lesson.

ADAPTATION TIPS FOR VIRTUAL DELIVERY

In the event of virtual delivery, use a digital platform and note student responses on a virtual blackboard. Students can be split up into virtual groups to work on a shared online document.

HOMEWORK (If any)

None



TEACHER'S RESOURCE: WORD BANK AND ANSWER KEY ON SEXUAL AND REPRODUCTIVE ANATOMY

Word Bank for Male Anatomy

Bladder
Urethra
Penis
Vas Deferens
Seminal Vesicle
Scrotum
Prostate gland
Testicle
Epididymis
Anus

Word Bank for Female Anatomy

Uterus
Ovary
Fallopian Tube
Vagina
Cervix

Word Bank for Female External Anatomy

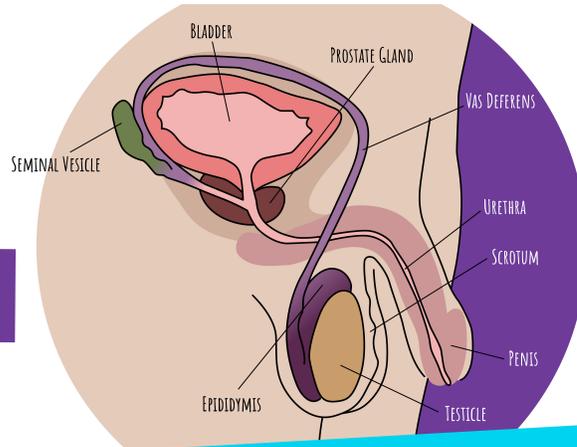
Clitoris
Urethra
Vagina
Vulva
Labia Minora
Labia Majora
Anus

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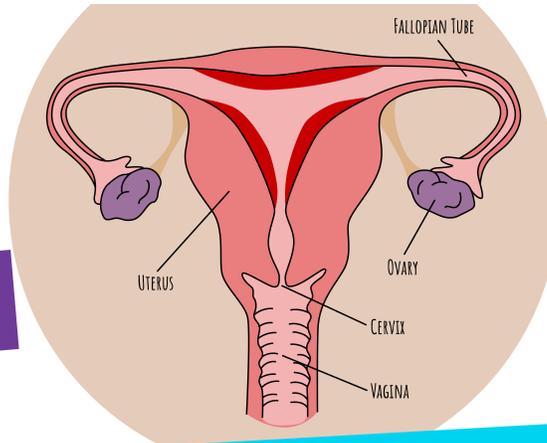


MALE ANATOMY



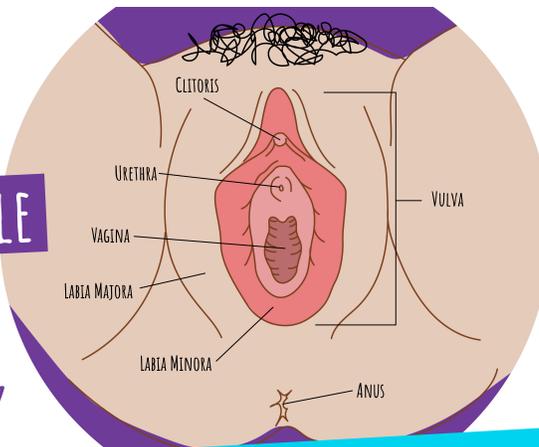
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FEMALE ANATOMY



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EXTERNAL FEMALE ANATOMY



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TEACHER'S RESOURCE: SEXUAL AND REPRODUCTIVE ANATOMY

MALE PART	WHAT IT IS/WHAT IT DOES
<p>PENIS (made up of shaft, glans, and foreskin)</p>	<p>Allows passage of urine and semen. Provides sensation (has many nerve endings). The average penis measures 3–4 inches when it's not erect (flaccid) and 5–7 inches when erect.</p>
<p>FORESKIN</p>	<p>Protects the glans of the penis. Provides sensation. Males who have been circumcised don't have one.</p>
<p>SCROTUM</p>	<p>Muscular sac which is shorter when cold, longer when warm. Holds testes. Controls temperature. Provides sensation.</p>
<p>TESTES (also called testicles)</p>	<p>Produces sperm and sex hormones (androgens and testosterone). Each is made of 500–1,200 feet of tightly coiled tubes.</p>
<p>SPERM (SPERMATAZOA)</p>	<p>Cell from a man called sperm. Sperm carry the strings of genes (called chromosomes) or DNA instructions in case the sperm meets with an egg cell and fertilizes it.</p>
<p>VAS DEFERENS</p>	<p>Provides storage for sperm. Allow passage of sperm. Carries sperm from the testes.</p>

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MALE PART	WHAT IT IS/WHAT IT DOES
SEMINAL VESICLES	Contributes fructose (sugar) to semen for nourishing the sperm.
PROSTATE GLAND	Produces most of the fluid that makes up semen.
EPIDIDYMIS	Allows maturation of sperm.
BLADDER	Provides storage for urine. Not part of the reproductive system.
ANUS	Allows passage of bowel movements (feces). Not part of the reproductive system. Provides sensation.

FEMALE PART	WHAT IT IS/WHAT IT DOES
UTERUS (made up of muscular walls, a lining called the endometrium, and a cervix. The uterus is also called "womb")	Houses and protects the fetus as it grows.
CERVIX	The bottom section of the uterus. Produces fluids to help sperm travel. Produces a mucus plug to keep out germs during pregnancy.

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FEMALE PART	WHAT IT IS/WHAT IT DOES
VAGINA	Allows passage of sperm. Produces fluid daily to cleanse and lubricate itself and help sperm travel. Allows passage of shed endometrium during menstrual period. Allows passage of baby. Provides sensation.
OVARY	Provide storage for the ovum (eggs). Allow maturation of the ovum. Produce sex hormones (estrogen, progesterone and androgens).
FALLOPIAN TUBES	Allow passage of ovum toward uterus. Allow passage of sperm from uterus.
VULVA (made up of labia majora, labia minora, and clitoris)	Protect opening of urethra and vagina. Provides sensation.
CLITORIS	Provides sensation (has many nerve endings).
ANUS	Allows passage of bowel movements (feces). Not part of the reproductive system. Provides sensation.

Student Worksheet:

Human Reproduction



Sperm exit the testicles and travel up the vas deferens	Sperm travel through the cervix, uterus, and into the fallopian tubes
Sperm cells mix with other fluid to become semen	Sperm cells leave the penis and enter the vagina (ejaculation)
Pregnancy Begins	Ovulation occurs (egg is released from ovary around every 25-30 days)
Fertilized egg attaches to the wall of the uterus (implantation) and conception is complete	The fertilized egg travels down through the fallopian tube to the uterus
Lining of the uterus thickens with blood	If the male & female have sexual intercourse then the penis is inserted into the vagina
Sperm is made in the testicles	Egg enters the fallopian tube
One sperm cell attaches to an egg in the fallopian tube and fertilizes it	

Student Worksheet:

Human Reproduction

MALE

FEMALE

[Empty box for Male label]

[Empty box for Female label]

[Empty box for Male label]

[Empty box for Female label]

[Empty box for Male label]

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[Empty box for Male label]

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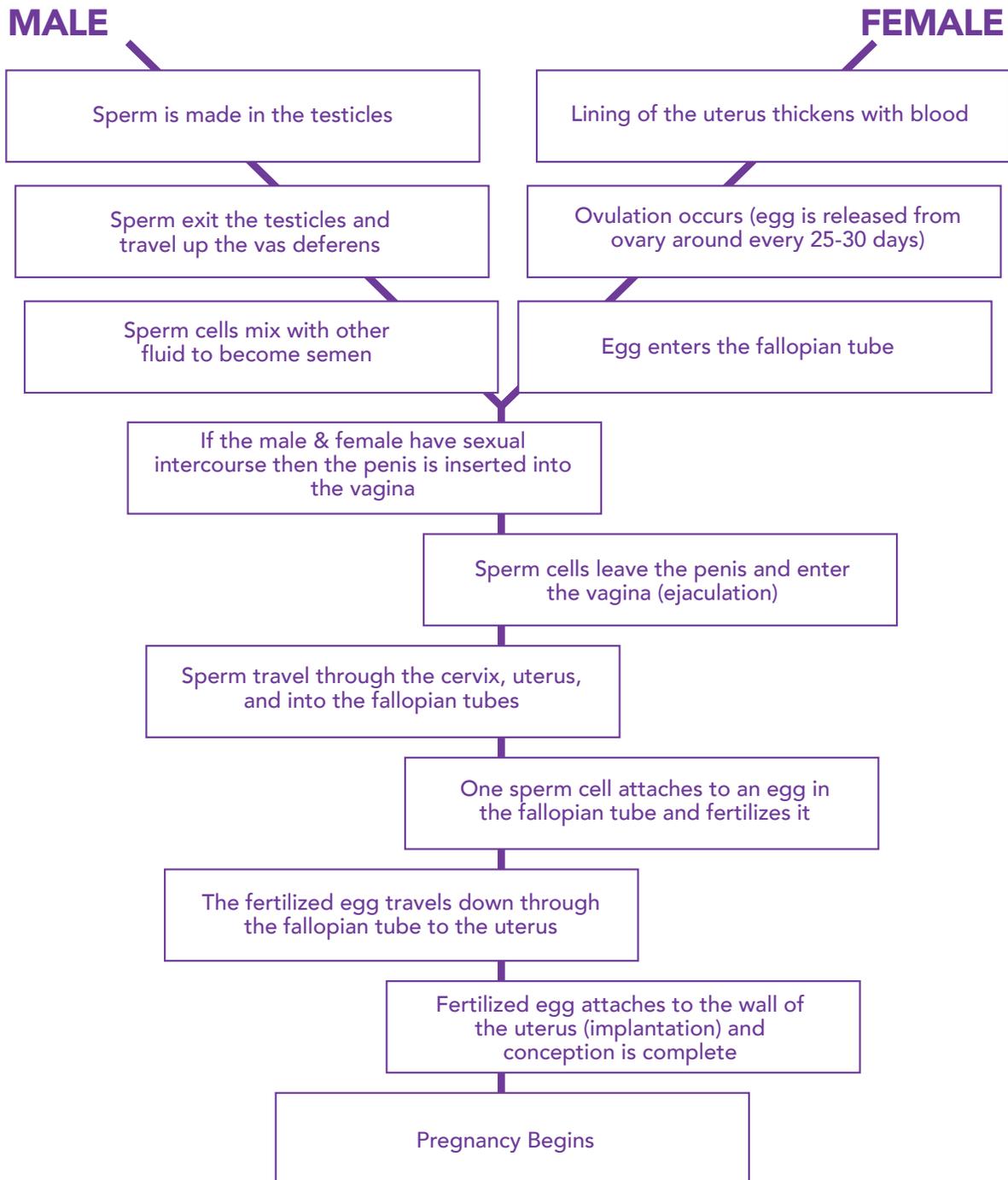
[Empty box for Male label]

[Empty box for Female label]

[Empty box for Male label]



TEACHER'S RESOURCE: ANSWER KEY ON HUMAN REPRODUCTION



Adapted from: Advocates for Youth. Puberty and Reproduction. Rights, Respect, Responsibility: A K-12 Curriculum and Advocates for Youth, UNESCO, and UNFPA. Sexual and Reproductive Anatomy and Physiology Part I and II. Regional Lesson Plans: A Set of Individual Scripted Lesson Plans for Comprehensive Sexuality Education in East and Southern Africa.



TEACHER'S RESOURCE: REPRODUCTION REQUENTLY ASKED QUESTIONS

Below are some questions that may come up during or after the lesson with respective answers to assist you in responding to students.

How do the sperm and egg meet?

The most common way for a sperm and egg to meet is during vaginal sex when a penis is inserted into a vagina. Semen, which is a fluid that carries sperm, is ejaculated, and the sperm can swim up through the cervix and uterus and travel to the fallopian tubes where they may find an egg. Now if the egg and sperm unite, the sperm fertilizes the egg and travels down to the uterus, where it implants into the uterine wall, and the process of pregnancy begins.

What keeps other sperm from entering the egg once it has been fertilized by a sperm?

When the sperm penetrates the egg, the surface of the egg changes so that no other sperm can enter.

What happens after fertilization?

In the fallopian tube, the fertilized egg, or zygote, begins to divide and grow, as it moves toward the uterus. This journey takes about five days. After it has divided once, it is called an embryo. Within two days of reaching the uterus, the embryo attaches or implants itself in the lining of the uterus. Implantation is the beginning of pregnancy.

How are sperm made?

Beginning during boys' puberty, sperm develop in the testicles and move into the epididymis, where they complete their development. The sperm then move to the vas deferens, or sperm duct. The seminal vesicles and prostate gland make a whitish fluid called seminal fluid, which mixes with sperm to form semen.

How many sperm does a man produce?

Men produce millions of sperm every day.

How many eggs does a woman have?

At birth, there are approximately 1 million eggs and by puberty, only about 300,000 remain. Of these, 300 to 400 will go through ovulation during a woman's reproductive lifetime. Fertility can drop as a woman ages due to decreasing number and quality of the remaining eggs.



What is an erection?

An erection is when a man gets sexually excited and the penis fills with blood and gets longer and harder. This makes it possible to have intercourse.

What is a spontaneous erection?

Spontaneous erections are erections that happen suddenly for no reason. It is common for teenage boys to get sudden erections, even when their penises have not been touched and they feel no sexual excitement. Teenage boys can have erections 20 or more times a day because of high or changing levels of testosterone in their bodies. Spontaneous erections go away by themselves if they are not touched.

What is ejaculation?

Ejaculation is when semen shoots out of the penis after sexual stimulation. This can also happen after a wet dream.

What is a wet dream?

When boys go through puberty, sometimes they get sexually aroused in their sleep and ejaculate. It's normal if you do and also normal if you don't have wet dreams.

Do girls have wet dreams and erections too?

Girls can have wet dreams and erections. During sleep, girls can experience wetness, or a wet dream, if the vagina lubricates or gets wet, but they usually don't ejaculate. Girls also have erections. When a girl or woman becomes sexually excited, the clitoris fills with blood and becomes erect. Because it is relatively small, the erect clitoris is not easy to notice.

How many sperm are released during ejaculation?

Around 40-150 million sperm.

How many sperm typically get close to the egg?

Only a few hundred will come close to the egg because of the many natural barriers that exist in a woman's body.

How many sperm does it take to fertilize an egg?

Only one sperm.

How long can sperm live in a woman's body?

Sperm can live in the uterus for about 5 days.



How long can an egg survive once it is released by the ovary?

Less than 24 hours.

How big is a sperm?

Each sperm is extremely small: only 0.05 millimeters long.

How big is an egg?

Not very big but the egg is larger than any other cell in the human body, at about 100 microns (or millionths of a meter) in diameter, about the same as a strand of hair, which is about 20 times bigger than a sperm.

What is artificial insemination?

This is when sperm are injected through a thin tube called a catheter into the cervix, uterus, or fallopian tubes by a health care provider. The sperm must travel up to the fallopian tube and unite with an egg. The fertilized egg travels down the fallopian tube to the uterus and implants in the wall, and then the process of pregnancy has begun.

What is in vitro fertilization?

When doctors bring a sperm and egg together in a laboratory, completely outside of a woman's body, and then later insert the fertilized egg into the uterus.

Can pregnancy happen outside the uterus?

Yes, but it is rare. In some cases, the egg can implant in the fallopian tube or other organs instead of the uterus. When this happens, the pregnancy is referred to as an ectopic pregnancy or a pregnancy that occurs outside the uterus and medical attention is needed.

Is there any ideal age to get pregnant?

There is no ideal age to get pregnant as getting pregnant is a personal decision but age affects the quality of women's eggs and the risk of complications from pregnancy and childbirth. Age also affects the quality of sperm.

Women in their 20s are the most fertile and have the best chance of getting pregnant. This is because they have the highest number of good quality eggs and their risk for pregnancy and childbirth complications is lowest. Meanwhile, too-early childbearing can increase the risk of death or complications from pregnancy and childbirth. The risk of death is highest for adolescent girls under 15 years of age and complications from pregnancy and childbirth are higher among adolescent girls ages 10-19 compared to women ages 20-24.

Men younger than 40 have a better chance of fathering a child than those older than 40. The



quality of sperm that men produce declines as they get older.

Is it possible to save eggs for the future?

Egg freezing is an option for women who aren't ready to become pregnant but want to try to make sure they can get pregnant later. Egg freezing doesn't require sperm because the eggs aren't fertilized before they're frozen. Egg freezing requires going to the doctor and using fertility drugs to ovulate in order to produce multiple eggs for retrieval. Frozen eggs can be fertilized by sperm from a partner or a sperm donor.

Is it harmful to get pregnant after age 35?

Many women successfully get pregnant after age 35 but there's a higher risk of pregnancy-related complications that might lead to a C-section delivery, heavy bleeding after delivery, a higher risk of certain conditions, such as Down syndrome, and a greater chance of losing the baby.

What are the signs of pregnancy?

Early signs of pregnancy differ from person to person and between pregnancies but can include:

- a missed period
- tender or swollen breasts
- sensitive nipples
- frequent urination
- unusual fatigue
- nausea and vomiting
- cramps
- feeling bloated
- changes in appetite
- feeling unusually emotional

How can you know if you are pregnant?

Pregnancy can be confirmed with a pregnancy test, which may be performed by a healthcare provider or purchased from a pharmacy.

Sources: IPPF and Population Council. It's All One Curriculum; Nemours KidsHealth. Sexual Health, Female and Male Reproductive Systems; Cleveland Clinic. Female Reproductive System: Structure & Function; Mayo Clinic. Pregnancy after 35: Healthy pregnancies, healthy babies and Egg freezing; Mayo Clinic. Getting Pregnant; UNFPA. Comprehensive Sexuality Education for Out-of-School Young People in East and Southern Africa; WebMD. Infertility and Artificial Insemination.