# Pregnancy Grades 9-12, Lesson 3

#### **Student Learning Objectives**

The student will be able to ...

- 1. list several early symptoms of pregnancy.
- 2. describe the process of conception.
- identify when a pregnancy test is needed and where people can access a confidential test.

#### Agenda

- 1. Discuss the transition from yesterday's Reproductive Systems class into today's Pregnancy lesson.
- 2. Briefly cover the process of conception using two chapters of the film *Life's Greatest Miracle* (available free online) **or** *Pregnancy Visuals 1-3.*
- 3. Brainstorm common symptoms of pregnancy and discuss pregnancy testing.
- 4. List local, credible, confidential resources for pregnancy testing that youth can access.
- 5. Briefly explain sex selection and fetal development using *Pregnancy Visuals 4-5*.
- 6. Facilitate the *Pregnancy Activity: Two Truths and a Lie.*
- 7. Ask three volunteers to share one important thing they learned today.
- 8. Assign homework.

This lesson was most recently edited on March 23, 2011.

#### **Materials Needed**

#### **Student Materials**

- Local Pregnancy Resource List and/or brochures, cards, and flyers (one copy per student)
- Pregnancy Activity: Two Truths and a Lie (one copy per student)
- *Individual Homework: Pregnancy* (one copy per student)
- Family Homework: Pregnancy (one copy per student)

#### **Classroom Materials**

 Pregnancy Visuals 1-5, contained in this lesson and also available online as PowerPoint slides at www.kingcounty.gov/health/FLASH.

#### **Teacher Preparation**

#### Well in advance ...

- Look up local resources for credible, confidential clinics that youth can access. Create
  a Local Pregnancy Resource List for those in King County, WA, we have done this for you
  on page 16 of this lesson and / or assemble brochures, cards and flyers from local clinics.
  - **Of particular concern**: Some services may advertise as full-service pregnancy centers when, in reality, they are staffed by lay people rather than licensed medical staff. These are sometimes referred to as limited service pregnancy centers. Their missions may be to dissuade young women from using birth control or accessing abortion services. They sometimes offer useful resources such as donated infant clothes, but students need to understand that theirs is a faith-based, not a public health, perspective. If a program in your area publicizes itself as providing pregnancy care, ask the center to provide answers to these questions:
    - Do they offer clinical services with a licensed health care provider or just urine pregnancy tests like those available in drug stores?
    - Do they provide or refer for all FDA approved contraceptive methods? If not, which ones?
    - Do they provide or refer for abortion? Adoption? Prenatal care?
- Check that you are able to access the film Nova film entitled Life's Greatest Miracle (URL below) from your classroom computer. If not, consult with your school district's IT staff about unblocking them and / or problem-solving how you can show them. You may need to confirm that your district did approve the films as a part of adopting the FLASH curriculum. You may need to download either Quicktime or RealVideo media players if one of them is not already on your computer. You may also find these sections on YouTube where you can watch the video full screen.
- **Preview chapters 3 and 4 of the free online**. Together, they take about 10 minutes. Find them here: <a href="https://www.pbs.org/wgbh/nova/miracle/program\_adv.html">www.pbs.org/wgbh/nova/miracle/program\_adv.html</a>.

#### The day before the lesson ...

 Make copies of Materials Needed (see above). You can copy the Worksheet back to back with the Resource List to save paper.

#### **Standards**

#### **National Health Education Standard:**

• **Standard 3:** Students will demonstrate the ability to access valid information, products, and services to enhance health.

**Performance Indicator 3.12.1:** Evaluate the validity of health information, products, and services.

**Performance Indicator 3.12.2:** Use resources from home, school, and community that provide valid health information.

**Performance Indicator 3.12.3:** Determine the accessibility of products and services that enhance health.

**Performance Indicator 3.12.4:** Determine when professional health services may be required.

**Performance Indicator 3.12.5:** Access valid and reliable health products and services.

#### **Washington State Health Education Standard:**

Essential Academic Learning Requirement (EALR) 2: The student acquires the
knowledge and skills necessary to maintain a healthy life: Recognizes dimensions of
health, recognizes stages of growth and development, reduces health risks, and lives
safely.

Component 2.2: Understands stages of growth and development.

**Grade Level Expectations (GLE) 2.2.1:** Analyzes the physiological and psychological changes throughout the lifetime.

**Grade Level Expectations (GLE) 2.2.2:** Understands how to maintain sexual health throughout life.

#### **Activities**

**NOTE:** Instructions to you are in regular font. A suggested script is in *italics*. Feel free to modify the script to your style and your students' needs.

1. Discuss the transition from yesterday's Reproductive Systems class into today's pregnancy lesson.

Explain: today's class will build on knowledge learned about reproduction and focus on pregnancy. While we could spend a whole week on this subject, today we will cover some of the basics about pregnancy including how pregnancy happens, symptoms, and where to go for a pregnancy test.

2. Briefly cover the process of conception.

There are two ways to do this:

a. Show two chapters of the Nova Online film entitled Life's Greatest Miracle.

First, explain that you're beginning with the 3<sup>rd</sup> chapter of an eight-part film and that at this point:

- The woman has ovulated (one of her ovaries released a mature egg).
- The fimbriae on the end of the Fallopian tube have drawn the egg into the tube.
- The couple has had intercourse and when the man ejaculated, he released about a teaspoon of semen containing about 300 million sperm into the woman's vagina.

The chapters are entitled *The Sperm's Journey* and *The First Two Weeks*. Together, they take about 10 minutes. Find them here:

www.pbs.org/wgbh/nova/miracle/program adv.html

Note: the beginning of *The Sperm's Journey* may seem jarring, so prepare students with how the sperm got into the vagina first.

- b. Or, alternately, using a document camera or PowerPoint slides, project and discuss Pregnancy Visuals 1-3. See lecture notes (below) or watch the film (above) yourself as preparation for teaching this 10-minute segment of the lesson. You can do both quickly to reinforce concepts.
  - Visual 1: Spermatozoon and Ovum

The ovum, or egg cell, is the largest cell of the human body, about the size of a grain of sand ... visible but only barely. The spermatozoon – or sperm cell for short –is much smaller. The human body is made of billions of cells (brain cells, blood cells, muscle and bone cells as well as eggs and sperm). Most cells in your body contain 23 pairs of chromosomes (for a total of 46). Each chromosome is a chain of genes. Unlike other human cells, sperm and egg cells contain 23 individual chromosomes each, rather than 23 pairs. When sperm and egg meet, they form 23 pairs of chromosomes for a total of 46 like other body cells. These chromosomes determine physical traits, personality, etc.

#### Visual 2: Fertilization

Usually, during intercourse (vaginal sex), when the man ejaculates, he releases about a teaspoon of semen, containing about 300 million sperm, into the woman's vagina. The semen contains millions of sperm which begin to swim towards the cervix. Many sperm eventually die. However, thousands quickly enter the uterus, with assistance from the cervical fluid, and travel toward the Fallopian tubes. It takes the fastest ones two days to reach a Fallopian tube. Others hang out and gradually, over a few days, begin their journey through the uterus into a tube. When they get there, if there happens to be an ovum waiting, many sperm will try to penetrate its outer layers. Only one may finally enter it, forming a fertilized egg. Fertilization is complete. But she is not yet pregnant. The fertilized egg contains a unique combination of genes: the blueprint for a new individual. Appearance, health and even aspects of personality are determined by that genetic blueprint.

By the way, notice where it says "EGG AND SPERM MAGNIFIED" on the picture? A human egg is actually about 1/4 the size of a grain of salt or the period at the end of a sentence. A sperm is much smaller and can be seen only with a microscope.<sup>1</sup>

#### Visual 3: The First Week

Over half of all fertilized eggs die for various reasons.<sup>2,3</sup> If the egg doesn't die, then within 12 hours it begins to divide, becoming 2 cells, then 4, then 8. In the meantime, it travels down the tube. By the fourth or fifth day, it enters the uterus and burrows into the rich endometrium, the lining of the uterus. It is still just the size of a grain of sand. This nesting process is called **implantation**. Now **conception** is complete.

**Note:** There are different opinions on the word *conception*; some people (and some states) equate it with fertilization. But the federal government and the American College of Obstetricians and Gynecologists define **conception as "a woman is pregnant only when a fertilized egg has implanted in the wall of her uterus." For the purposes of describing pregnancy and later when birth control and Plan B are discussed, we define conception in this way.** 

Before moving on, whether you used the video or the visuals, ask some students to define the terms fertilization, implantation, and conception to ensure understanding. Correct any misconceptions.

Brainstorm and discuss common early symptoms of pregnancy. Write the symptoms
on the board as people suggest them and then go back and explain a little about each one
(scripted below).

Explain: Not all pregnant women experience the same symptoms to the same degree. And these symptoms aren't unique to pregnancy. Some can indicate that a woman is getting sick or that her period is about to start. Likewise, someone can be pregnant without experiencing any of these symptoms. But if someone misses a period and / or notices any of these other symptoms after having unprotected intercourse (penis-vagina sex with no condom or other birth control), it would be a good idea to make an appointment at a clinic to find out for sure if she is pregnant.

- **Missing a period:** About two weeks after an egg is fertilized the woman's body **may** be releasing enough progesterone to stop what would have been her next period. Some women do have a lighter than usual period rather than stopping altogether at this point. But many stop having periods starting at the very beginning of the pregnancy.
- **Tender, swollen breasts:** As early as two weeks after conception, hormonal changes may make a woman's breasts feel tender, sore, fuller or heavier.
- Fatigue: Hormonal changes during pregnancy can make a woman feel sleepy and less energetic.
- Nausea with or without vomiting: Sometimes called "morning sickness." This feeling can begin in pregnant women as early as two weeks after conception. This also comes from the hormonal changes in pregnancy. Pregnant women also have a heightened sense of smell, so odors like certain foods cooking, perfume, or cigarette smoke may cause nausea in pregnancy.
- Frequent urination: The feeling of having to go to the bathroom a lot can also be a symptom of pregnancy. This sensation sometimes stops and then recurs later in the pregnancy.
- 4. List local credible, confidential resources for pregnancy testing that students can access.

Hand out local resource brochures, flyers, and/or a *Local Pregnancy Resource List*. Briefly discuss each clinic, unless you are confident that students are completing their research (which was assigned on day one of this unit) and will make Research Reports to the class at the end of the unit.

- 5. Briefly explain sex selection and fetal development using *Pregnancy Visuals 4-5*.
  - a. Using a document camera or PowerPoint, show Pregnancy Visual 4: Sex Determination. Explain: Of each parent's 23 pairs of chromosomes, one pair is the sex chromosomes. The mother's sex chromosomes are always a pair of X's so when they part, to form 23 single chromosomes, each egg receives an X. Men's sex chromosomes, on the other hand, are always a pair consisting of one X and one Y. So when the father's chromosomes part to form spermatozoa, half the sperm receive an X and half receive a Y. Thus, an X egg fertilized by an X sperm makes an XX baby: a girl. An X egg (all eggs are X's, remember) fertilized by a Y sperm makes an XY baby: a boy.

**NOTE**: We use the word "sex" rather than "gender" here and throughout this lesson because the development of gender is much more complicated than there's room for in this lesson. A newborn's **sex** is male, female or, if there are anomalies, intersex. The individual's **gender** (internal sense of maleness and/or femaleness; external expression that is more masculine, more feminine, flexible or androgynous) is probably forged by a combination of factors including the chromosomes in the sperm and egg, the intrauterine environment, exposure to chemicals, culture, and social influences, too.

b. **Show Pregnancy Visual 5: Fetal Development.** Explain: For the first two months, the developing baby is called an embryo. After that, it's called a fetus. But pregnancies are often described in three month periods of time or "trimesters." People often say the word "baby" while a woman is pregnant, but baby refers to the time after birth.

**The first trimester** of pregnancy is the first three months after conception. During this period of time:

- All organs begin to develop, so the embryo is most susceptible now even in the time before the woman has missed a period -- to damage from infections and from alcohol, nicotine and other drugs.<sup>5</sup>
- During month two, genitals begin to form and during month three, male and female fetuses begin to look different.
- By the end of the first trimester, the fetus is almost three inches long (about as long as three quarters -- laid end to end) and weighs about an ounce (or as much as just one of those quarters).

The second trimester is the next three months. During this time:

- Organs continue to mature.
- The fetus grows much longer. By the end of the sixth month, it is ¾ its birth length -- about 14 inches long, about as long as three cans of soda laid end to end. But it weighs just 1.7 pounds, less than ¼ its full-term birth weight, about as much as just one can of soda.
- By the end of this trimester, 6 months into the pregnancy, the fetus is unable to survive outside the uterus without extraordinary medical attention.

**The third trimester** is the last three months of the pregnancy until birth. The "due date" is 40 weeks from the first day of the woman's last menstrual period or about 38 weeks from conception. During this last trimester:

- The fetus's brain and lungs continue maturing.
- The fetus begins to open and close its eyes, suck its thumb, and respond to light and sound.
- By the end of the third trimester, the fetus weighs, on average, 7.6 pounds. A
  newborn smaller than 5.5 pounds is described as "low birth weight." One that's
  over 8.8 pounds is considered "high birth weight." Being born very small or very
  large can mean more complications and health risks.
- 6. Play "2 Truths and a Lie" Activity.

Invite two students to act as an Emcee and a Scorekeeper. Divide the rest of the class into teams of three to four people and have each choose a name and a Captain.

Explain: The Emcee will read the first three statements aloud. Each team will huddle to decide which of the three statements they think is the "lie." Their designated Captain will raise one to three fingers to show which one they chose. The Emcee will read the answer aloud using the Answer Key. The Scorekeeper will give ten points to all the teams with the right answer. The team with the most points at the end of the game will be the winner. But everyone will mark the correct answer on their own copy to turn in at the end of the game for credit.

Hand out the game and turn the floor over to the Emcee.

#### 7. Ask three volunteers to share one important thing they learned today.

You can end by saying: Hopefully, you all understand how pregnancy happens, and how women know they are pregnant. Later, we will discuss how to prevent pregnancy.

#### 8. Assign homework.

- a. Individual Homework: Pregnancy
- b. Family Homework: Pregnancy

Reminder: The English version is on the last page of this lesson plan. You will find the Family Homework in English, Spanish, Russian, Chinese, Vietnamese and Arabic at <a href="https://www.kingcounty.gov/health/FLASH">www.kingcounty.gov/health/FLASH</a> – click on "Parents & Guardians."

#### **Related Activities for Integrated Learning**

#### ART

Create a colorful map of places in your community (defined however you wish) to get a free and confidential pregnancy test. If you live in King County, Washington you can go to: <a href="https://www.teenclinic.com">www.teenclinic.com</a> for more information.

#### **SOCIAL STUDIES / CIVICS**

Research state laws about minors' rights to reproductive health care. Compare and contrast ten states of your choice and create a brief report highlighting your findings. Discuss which states have more liberal laws and which are more restrictive for teens trying to access health care on their own. This website can help: <a href="https://www.sexetc.org/state">www.sexetc.org/state</a>.

#### **MATH**

Calculate the end of each trimester and the estimated due date for a pregnant woman whose first day of her last menstrual period was October 10, 2010. Show your calculation.

# Pregnancy: Two Truths and a Lie Activity

**Directions:** For each topic, one of the three statements is a lie. Circle the number of the lie for each letter.

#### **A. Pregnancy Symptoms**

- 1. Everyone stops having periods as soon as they get pregnant.
- Common pregnancy symptoms are breast tenderness, nausea and food cravings.
- 3. Many pregnancy symptoms are caused by a change in the female's hormones.

#### **B. Pregnancy Testing**

- 1. A person can get a pregnancy test at a health clinic or buy a urine test in a drug store.
- 2. Pregnancy tests can show results as early as one hour after conception.
- 3. There are two ways to confirm a pregnancy: a urine test or an abdominal exam by a health care professional.

#### C. Clinics and laws

- 1. A person can get a pregnancy test at a Public Health clinic, Planned Parenthood or school based health center even if she is less than 18 years old.
- 2. The results of a pregnancy test are kept confidential in WA State.
- 3. All states have the same laws about minors (under 18 years old) and reproductive health care.

#### D. Conception

- 1. The ovum and the sperm meet in a female's Fallopian tubes.
- 2. The period of time between conception and birth during which the fetus grows and develops is called gestation.
- 3. It takes a million sperm to create a pregnancy.

#### E. Fetal development

- 1. A trimester is three months long.
- 2. For the first eight weeks the developing baby is called a fetus.
- 3. The most vulnerable time in terms of diseases and drugs is the first trimester.

#### F. Sex Determination

- 1. The number of multiple births in the United States is increasing.
- 2. The egg determines the sex of the baby.
- 3. An X egg fertilized by a Y sperm makes an XY baby: a boy.

## 2 Truths and a Lie - ANSWER KEY

The "LIES" below are highlighted and explained...

#### A. Pregnancy Symptoms

- 1. Everyone stops having periods as soon as they get pregnant. (Not true. Some women *don't* miss a period until they have been pregnant for a couple of months! Their periods might just seem lighter and shorter at first.)
- 2. Common pregnancy symptoms are breast tenderness, nausea and food cravings.
- 3. Many pregnancy symptoms are caused by a change in the female's hormones.

#### **B. Pregnancy Testing**

- 1. A person can get a pregnancy test at a health clinic or buy a urine test in a drug store.
- 2. Pregnancy tests can show results as early as one hour after conception. (Not true. Urine tests are usually accurate 10-14 days after intercourse. But there's no need to wait longer than that. The sooner a woman starts prenatal care or has an abortion, the safer it is.)
- 3. There are two ways to confirm a pregnancy: a urine test or an abdominal exam by a health care professional.

#### C. Clinics and laws

- 1. A person can get a pregnancy test at a Public Health clinic, Planned Parenthood or school based health center even if they are less than 18 years old.
- 2. The results of a pregnancy test are kept confidential.
- 3. All states have the same laws about minors (under 18 years old) and reproductive health care. (Not true. No state laws *require* doctors to notify parents about pregnancy tests. Some doctors or insurance companies might anyway. People who need privacy should ask when they make the appointment. Some states *do* require parents' consent for prenatal care or abortion. *In our state* ... (NOTE to teachers: Explain your own state's law here. See *Appendix 2 Pages 3 and 9*.)

#### D. Conception

- 1. The ovum and the sperm meet in a female's Fallopian Tubes.
- 2. The period of time between conception and birth during which the fetus grows and develops is called gestation.
- 3. It takes a million sperm to create a pregnancy. (Not true. Hundreds of millions are released in ejaculation. But just a few hundred are needed to wear away the egg's protein coat so that one can penetrate it and become part of the embryo.)

#### E. Fetal development

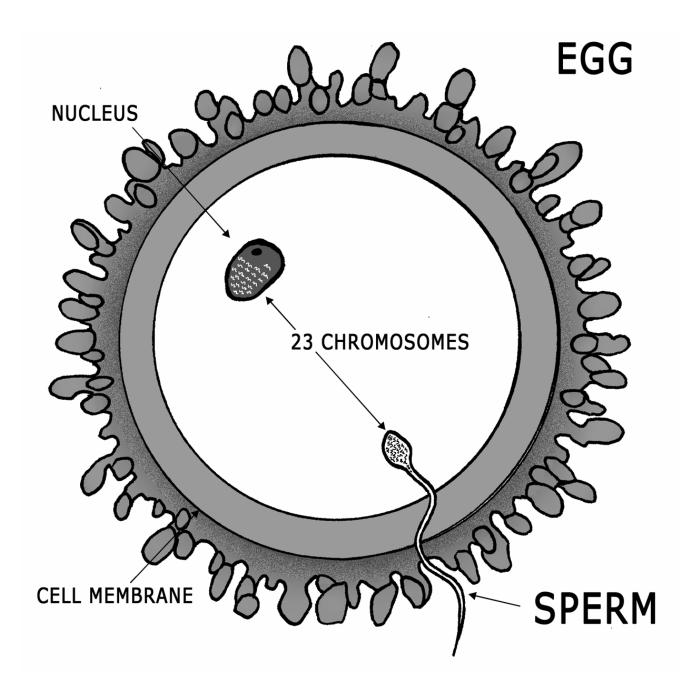
- 1. A trimester is three months long.
- **2.** For the first eight weeks, the developing baby is called a fetus. (Not true. For the *first* eight weeks it is called an *embryo*.)
- 3. The most vulnerable time in terms of diseases and drugs is the first trimester.

#### F. Sex Determination

- 1. The number of multiple births in the United States is increasing. This is likely due to greater use of assisted fertility methods like in vitro fertilization.
- **2.** The egg determines the sex of the baby. (Not true. The *sperm* contains an X chromosome [female] or a Y [male]. All eggs have X-shaped chromosomes.)
- 3. An X egg fertilized by a Y sperm makes an XY baby: a boy.

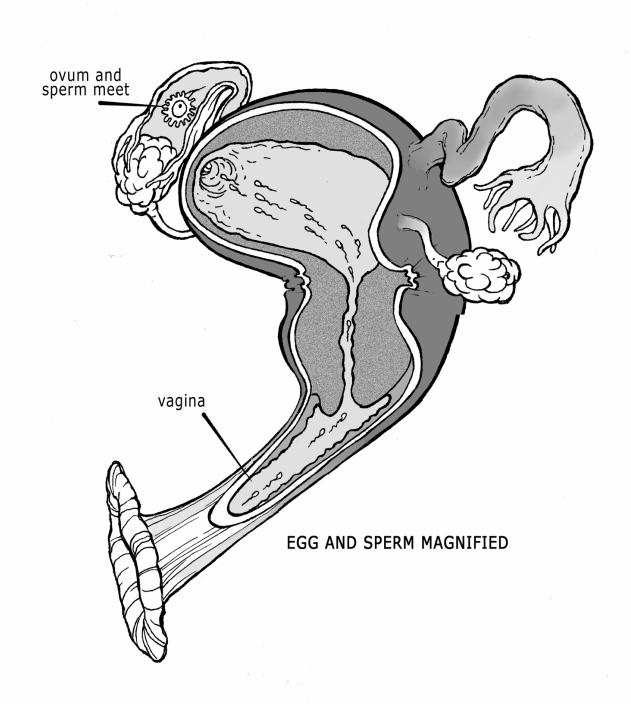
## Pregnancy Visual 1:

# Sperm & Egg (Ovum)



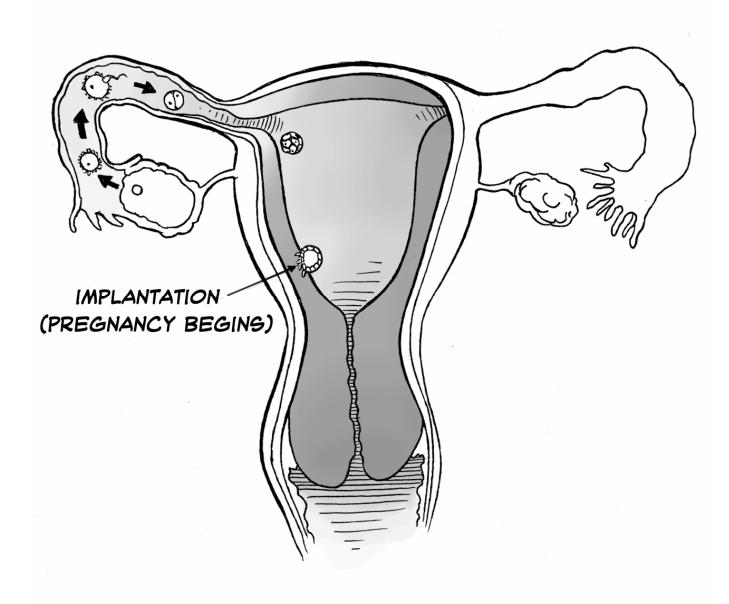
## Pregnancy Visual 2:

## **Fertilization**



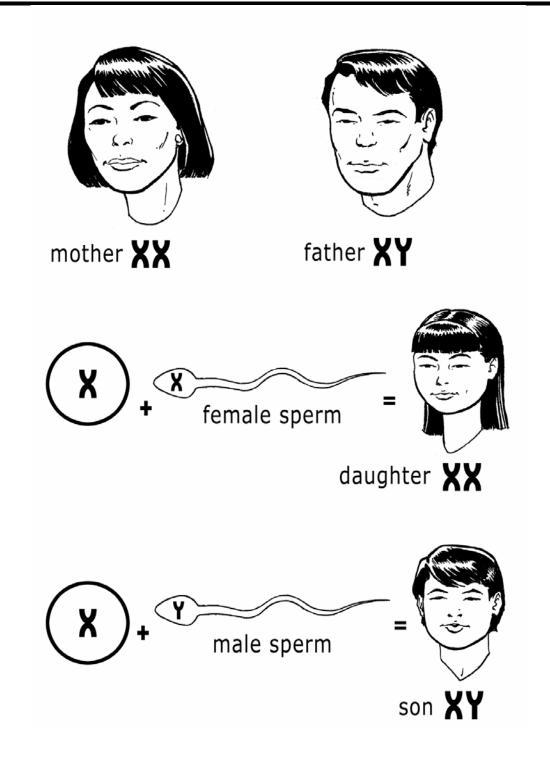
## Pregnancy Visual 3:

## The First Week



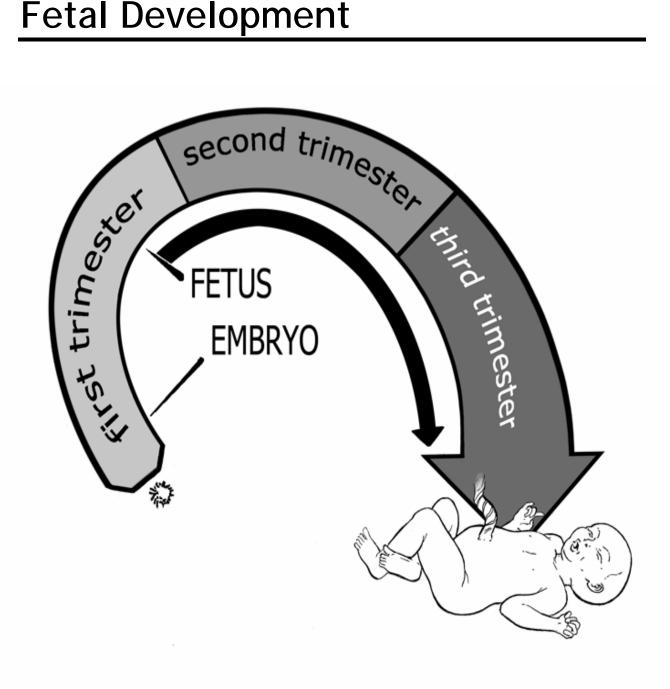
### Pregnancy Visual 4:

## Sex Determination



## **Pregnancy Visual 5:**

# Fetal Development



## **Local Pregnancy Resource List**

#### In Washington State:

The <u>Family Health Hotline</u> can help you locate resources in your community including health clinics, pregnancy resources, health insurance, food banks and more. In Washington State, most pregnant teens qualify for free Pregnancy Medical insurance which covers medical needs related to pregnancy, as well as other services. Call **1-800-322-2588** or visit www.parenthelp123.org

#### In King County, Washington:

The following clinics provide pregnancy testing and referral for all options. These clinics accept DSHS Medicaid coverage. For those with out insurance, the clinics operate on a sliding fee scale which means the lower your income, the less amount of money you pay for services.

#### **Public Health – Seattle & King County Clinics**

Theses clinics provide pregnancy tests, as well as WIC and MSS services (Women, Infants and Children and Maternity Support Services - preventive health and nutrition programs that provides assistance to young families to promote optimal growth and development). These clinics can refer for abortion, adoption, and other needs. Some Public Health clinics also offer prenatal care. No one is turned away if they can't pay. To find a clinic near you, go to:

www.kingcounty.gov/healthservices/health/locations.aspx or www.teenclinic.com

#### **Planned Parenthood of the Great Northwest**

These clinics provide pregnancy tests and support all options. Some of their locations provide abortions and operate on a sliding fee scale. To find a clinic near you, call 206-328-7700 or go to <a href="https://www.ppgnw.org">www.ppgnw.org</a>.

#### **Community Clinics in King County**

Many family doctors and community clinics can also help with pregnancy testing and referral for all options. To find a community clinic near you, go to: www.kingcounty.gov/healthservices/health/personal/insurance.aspx

#### **Group Health Cooperative Teen Pregnancy and Parenting Clinic**

The Teen Pregnancy and Parenting Clinic at the Group Health Capitol Hill Campus in Seattle provides prenatal care, labor and delivery management, postpartum care, and well-child care up to age 2. This program also offers free pregnancy testing and contraception advice. It is only for members of Group Health, but services are confidential, even if a teen's family belongs. Call 206-326-2656 for more information.

**NOTE:** Teachers outside King County, WA will create your own *Local Pregnancy Resource List* using this one as a model.

# Individual Homework: Pregnancy

Name:	Period:
<b>Directions:</b> Imagine that a friend has just come to be pregnant. What would you say to her? Think aboless about pregnancy and resources.	
Write her an e-mail, a series of text messages, or a	a note as a supportive friend.
Be sure to include information about two places should be placed at tack it to this page.	e could go for a pregnancy test. Use
Due:	

# Family Homework: Talking about Pregnancy

All Family Homework is optional. You may complete an Individual Homework assignment instead.

**Purpose:** This is a chance to share with one another some of your own (and your family's, your religion's) beliefs about sexuality and relationships. It will also give you a chance to get to know one another a little better.

**Directions:** Find a quiet place where the two of you – the student and the trusted adult (parent, guardian, stepparent, adult friend of the family, best friend's parent, etc.) – can talk privately. Set aside about 10 minutes. During this time, please give full attention to one another ... no texting, watching TV and so on.

Now ask one another the following questions, with the understanding that:

- You are each welcome to say, "That one is too private. Let's skip it."
- What you discuss will not be shared with anyone else, even within the family, unless you give one another permission to share it.
- It's OK to feel silly or awkward and it's important to try the homework anyway. We recommend that you take turns asking questions. When it is your turn to listen, really try to understand the other person's response.

ASK THE ADULT: What information did you receive about pregnancy when you were in school?

ASK THE STUDENT: Tell me about some of the things you discussed in class today ... terms such as "trimester" and "low birth-weight" and concepts like "conception" and "sex determination".

IF THE ADULT HAS BEEN PREGNANT, invite them to share stories of their pregnancy with you.

Family Homev	work: Pregnancy – Confirmation Slip	
FOR FL	JLL CREDIT, THIS HOMEWORK IS DUE:	
We have completed	I this Homework Exercise.	
Date:		
	student's signature	
	signature of family member or trusted adult	

#### References

<sup>1</sup> Genetic Science Learning Center (2011, January 24) Cell Size and Scale. *Learn.Genetics*. Retrieved January 29, 2011, from http://learn.genetics.utah.edu/content/begin/cells/scale/

<sup>&</sup>lt;sup>2</sup> Macklon, N.S., Geraedts, J.P.M., and Fauser, B.C.J.M. (2002). Conception to ongoing pregnancy: the 'black box' of early pregnancy loss. *Human Reproduction Update*, *8*(4), 333-343.

Wilcox, A.J., Weinberg, C.R., O'Connor, J.F., Baird, D.D., Schlatterer, J.P., Canfield, R.E., Armstrong, E.G. and Nisula, B.C. (1988, July). Incidence of early loss of pregnancy. *New England Journal of Medicine*, 363(18), 1740-1747.

<sup>&</sup>lt;sup>4</sup> Gold, R. B., (2005, May). The implications of defining when a woman is pregnant. *The Guttmacher Report on Public Policy*, *8*, 2.

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