# Overton High School- Station Rotation Lesson Plan

**Subject: \_\_\_\_\_\_\_\_\_Human Anatomy and Physiology\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Teacher: \_\_\_\_\_\_\_\_\_Dr. Pani\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

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| Learning Goals / PBO(s) | Weeks of 04/28-05/09/2025 |
| •**SWBAT evaluates the Reproductive system components IOT analyze the mechanisms of reproduction and childbirth in Human**. The objectives are outlined below.   1. Identify and describe the organs of the human male and female reproductive systems that provide the physiological functions of gametogenesis, fertilization, and embryogenesis. Examine the microscopic structures of the human egg and sperm and explain how their structures relate to their functions. Trace the major events of human development with fertilization to birth, with a focus on the development of organs and functional organ systems. 2. Based on the secretion of hormones, identify the endocrine tissues of the reproductive system, and describe their roles in regulation of secondary sex characteristics, the female menstrual cycle, pregnancy, fetal development, and parturition. Based on the secretion of hormones, identify the endocrine tissues of the reproductive system and describe their roles in regulation of secondary sex characteristics, the female menstrual cycle, pregnancy, fetal development, and parturition. |  |

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| Opening / Whole Group Instruction *How will you begin the lesson? What information needs to be provided before the students rotate through stations?* |
| **Phenomenon:** Controlling Breast Cancer with Pregnancy Although pregnancy can place stress on the human body, recent studies show that it also has some physiological benefits. A protein called alphafetoprotein (AFP) that is produced during pregnancy may inhibit the development of breast cancer. This finding came about after researchers discovered that the incidence of breast cancer is less in women who have had at least one full-term pregnancy. Women normally have a 13% chance of developing breast cancer; however, the chance is reduced to 7% in women who have biological children. Scientists surmised that AFP may play a role in reducing the incidence of breast cancer. A team of researchers developed an artificial form of AFP called AFPep. (The term AFPep is used to distinguish the artificial form of the protein from the naturally occurring AFP.) Using mice in their studies, they compared AFPep with a drug therapy called tamoxifen, which is currently used to treat breast cancer. The results showed AFPep to be equally effective at reducing the incidence of breast cancer as tamoxifen. In addition, the cancer cells did not lose sensitivity to AFPep; cancer cells ultimately become resistant to tamoxifen after prolonged treatments. Another benefit of AFPep is that it is not nearly as toxic as other chemotherapy treatments. Research indicates that during pregnancy, AFP plays a role in estrogen regulation. Most breast cancers are initiated by high levels of estrogen.. |

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| Stations *(Gradual Release)* | Teacher Led *(I Do)* | Small Group Collaboration *(We Do)* | Tech Infused *(You Do)* |
| **Time at Station** | 15 minutes | 15 minutes | 15 minutes |
| **Skill or Knowledge students will learn at this station** | ● Illustrate the parts of the reproductive systems.  Summarize the functions of the male and female reproductive systems.  ● Demonstrate the differences between the male and female reproductive systems.  ● Differentiate the primary and secondary sexual characteristics of both the male and female.  ● Describe preventative health checks that will allow for detection of reproductive illnesses. | -What are the functions of the testicles and ovaries?  -What is the function of the epididymis?  -How does the sperm and ova travel through the vas deferens and fallopian tubes?  -What is the purpose of the cowper’s gland, seminal vesicle and the prostate gland?  -How does the urethra function in the male and female?  -How does fertilization occur?  -How is a vasectomy and a tubal ligation similar?  -What types of preventative medicine can we practice preventing diseases of the reproductive system? | Crash Course Videos:  The Reproductive System:  Crash Course Videos -1  Crash Course Videos- 2.  Crash Course Videos- 3. |
| **Description of the activity and assessment plan** | Students will describe homeostatic imbalances that can occur in relation to the reproductive dysfunction. Students will also use evidence to describe in detail each problem along with the underlying cause of each imbalance.  Part 4 Explore Investigation: • Case Study Investigation #15, pgs. 530, 533, 541, 544, 554, 560 • A Case Study: Mandatory Methods for Controlling Sexually Transmitted Diseases, pgs. 567-569 EMC AA&P Workbook & Laboratory Manual: Ch. 15 The Reproductive System and Human Development, pgs. 287-305 • Laboratory Activity 1: Predicting Birth Defects; pgs. 299-301 • | Students will be assessed according to their performance of identifying the parts of the reproductve Systems, and the related disfunctions and undelaying diseases. | •Engage Videos: 1. The Reproductive System |Khan Academy| 2. Crash Course: Reproductive System-Female, Part 1 3. Crash Course: Reproductive System-Male, Part 2 4. Crash Course: Reproductive System-Sex & Fertilization, Part 3 5. Crash Course: Pregnancy & Development.  • Laboratory Activity 2: Modeling the Test for Human Chorionic Gonadotropin; pgs. 301- 302 Explain Elaborate Quarter 4 DRAFT Shelby County Schools 2021-2022 14 of 15 The reproductive system is the last system studied in high school human anatomy and physiology. It is a collection of internal and external organs, in both males and females, that work together for the purpose of procreating. Due to its vital role in the survival of the species, many scientists argue that the reproductive system is among the most important system in the entire body. Around 49.5 percent of the world’s population is female, so there are slightly more men on the planet than women. A person’s sex is determined by what reproductive system the person has, but it isn’t always so simple. Misconceptions • Fertilization occurs in the fallopian tube (oviduct) of the female reproductive system. Once fertilized, the egg attaches to the lining of the uterus. It becomes a ball of cells over time, then develops in the uterus of the female to become a baby. • Only females are born with reproductive sex cells. Females are born with immature eggs already in their ovaries. When puberty occurs, the eggs mature and are released by the ovaries. Males only produce sperm after reaching puberty. • Females do not urinate through the vagina. In men, both semen and urine pass through the urethra, a passageway that terminates at the end of the penis. Females urinate through a urethra as well, but it is not connected to their vaginal opening. AFPep is that it is not nearly as toxic as other chemotherapy treatments. |
| **Necessary resources** | Textbook Resources Applied Anatomy & Physiology 2nd Ed.: A Case Study Approach; Brian R, Shmaefsky Ch. 13 The Digestive System; pgs. 460-495 Ch. 14 The Urinary System; pgs. 496-529 Ch. 15 The Reproductive System and Human Development; pgs. 530-569  Human Models, Posters, dissections, videos, and Textbook  Reinforcements  Applied Anatomy & Physiology 2nd Ed.: A Case Study Approach; Brian R, Shmaefsky. | Websites/Videos EMC Bookshelf Glossary CSI Worksheets Crossword Puzzles Human Anatomy Online Biology Corner Explore Health Careers Visible Body Additional Resources ACT & SAT TN ACT Information & Resources SAT Connections SAT Practice from Khan Academy Khan Academy Illuminations (NCTM) Discovery Education The Futures Channel The TeachingChannel Teachertube.co | Research indicates that during pregnancy, AFP plays a role in estrogen regulation. Most breast cancers are initiated by high levels of estrogen. Resource: Applied Anatomy & Physiology 2nd Ed.: A Case Study Approach; Brian R, Shmaefsky, pg. 557 Short Readings • Gestation Facts, pg. 53 |
| **Differentiation if applicable** | N/A | N/A | N/A |

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| Closing / Whole Group *How will you close out the lesson?* |
| Student will complete the exit tickets by Describing their learning outcomes of the day |

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| Data Collection *What data will be used to identify individual student progress?* |
| 1. **Case Study Investigation** 2. **Check For Understanding: Mini Quiz** 3. **Laboratory Activity** |