

Development Worksheet

- What is the purpose of development?
- What components are required for conception?
- What is a trimester?
- What is the path that sperm travels to get to the egg? What are the challenges sperm faces?
- How many sperm are deposited in the vagina? How many make it to the cervix? To the egg?
- How long does it take the sperm to reach the egg? Can it fertilize the egg immediately? Why or why not?
- What is the path inside the ampulla of the oviduct that sperm must travel to cause fertilization? How is this accomplished?
- What happens to the sperm when the ZP3 glycoprotein is reached by the sperm? What happens as a result of this?
- What occurs after the zona pellucida is breached? Is the same sperm performing each step of the sequence?
- Does the fusion of the sperm and oocyte plasma membrane equal fertilization?
- What happens (chemically) to the secondary oocyte when a sperm fuses with its own plasma membrane? Why?
- What happens (genetically) to the secondary oocyte when a sperm fuses with its own plasma membrane?
- When the oocyte completes meiosis II and becomes a mature ovum, the genetic contents of the egg and sperm are different. How? What are they called?
- How does fertilization then occur? What is the result of fertilization? Where, in the female reproductive tract, is fertilization occurring?
- How might fraternal twins be formed?
- Is the zygote diploid or haploid? Is it genetically identical to either parent? Why or why not?
- After about 24 hours after fertilization, the zygote undergoes cleavage. What is cleavage? How long does it take to complete the first cleavage? What are these cells called? Where in the oviduct is the first cleavage occurring?
- By the end of the 2nd day, how many cells have been formed? Where is this in the female reproductive tract?
- How many cells have been formed by the end of the third day?
- What is a morula? How many cells are involved? Are there any other structures involved with the morula? Where is the morula located in the female reproductive tract?
- By the end of the 4th day, how many cells form the morula? Where are you located in the female reproductive system?
- What is a blastocyst? What are the layers of the blastocyst? How many cells are in a blastocyst? What is the relative size of the blastocyst? What is a blastocoel? Does the blastocyst have the zona pellucida?
- What will inner mass cells ultimately give rise to? What will the trophoblast cells ultimately give rise to?
- By the end of the 5th day, the blastocyst sheds a layer. What is this layer? Why must this occur?
- What stage of the menstrual cycle is the uterus in? What does this mean for the blastocyst?
- What is implantation? When does this occur post-conception? How and where does this occur?
- Why would the blastocyst need to bury itself into the endometrium?
- Summarize the events that occur during the first week of development.
- What is the status of the corpus luteum during implantation?
- About day 8, the trophoblast undergoes a change to form two layers. What are these layers and what will each do?
- About day 8, the inner cell mass forms the bilaminar disk. What is the structure of the bilaminar disk?
- About day 8, the yolk sac begins formation. What is the purpose of the yolk sac in humans? How is it formed? What are the functions of the yolk sac?
- What is the allantois? Where does it form? What is the role of the allantois in development?
- About day 8, the amnion begins formation. What is the purpose of the amnion? How is it formed? What are the functions of the amnion?

- About day 9, lacunae in the endometrium begin to form. What are lacunae? How are they formed? What is the purpose of lacunae?
- What is the decidua? What is the decidua basalis? What is the decidua capsularis?
- About day 12, the extraembryonic coelom begins development. What is the extraembryonic coelom? How does it form?
- About day 12, the extraembryonic mesoderm is forming. What is the purpose of the extraembryonic mesoderm? Where is it located?
- By day 14, the chorion begins formation. How is the chorion formed and what is its purpose?
- Summarize the events of Week 2.
- What is gastrulation (in general)?
- At about day 15, the trilaminar disc begins to form. What is the trilaminar disc?
- What is the primitive streak? How is it formed?
- How are the three germ layers formed? What does each ultimately give rise to?
- On about day 16, the primitive node begins formation. What is the primitive node? How is it formed?
- What is organogenesis?
- At about day 16, the notochord begins to form. What is the notochord? How is it formed? What is the importance of notochord on other developing tissues?
- What is neurulation? How does it occur? What does it form?
- Describe [very general terms] organogenesis for the gastrointestinal and cardiovascular system [very general terms].
- Describe [very general terms] organogenesis for the cardiovascular system.
- What is occurring with the umbilical veins, umbilical arteries and the placenta as far as the fetus is concerned?
- The time characterized by the first 8 weeks of development is called? What is fetal development?
- What maternal hormones are at play? Where does each come from? When does each peak? What is the role of each hormone?
- What changes occur in the female during pregnancy? Why?
- What is meant by parturition? When does it typically occur?
- What are the differences between false and true labor?
- How does labor begin? What are the stages of true labor and what occurs in each stage?
- What changes occur in the neonate in the respiratory and cardiovascular systems after birth?
- How does pregnancy change the structure of the breasts?
- What is lactation, how does lactation occur? What are the components of breast-milk? What is the benefit to breastfeeding over bottle-feeding?
- Overview: What are the events that lead to fertilization of the secondary oocyte?
- Overview: What is the path and timeline of egg/zygote location?
- Overview: What events allow for implantation?
- Overview: How do tissues arise and develop?
- Overview: What are the roles of hormones on embryonic and fetal development?
- Overview: How does labor and delivery occur?
- Overview: How does the neonate adjust to a new environment?
- Overview: How does let-down occur?