D3.1 Reproduction

What the Cell · DP Biology · note-taking sheet · human statements D3.1.1–7

Name _____ **Date** _____

How to use this sheet: go through the slides and videos with it, then close them and write from memory. Use your own words and add page numbers from the book where you want more detail.

Guiding questions. What does sexual or asexual reproduction show about change and continuity? How must organisms change in order to reproduce?

D3.1.1 How sexual and asexual reproduction differ

Textbook pp. 693–694

	Asexual	**Sexual**
Number of parents		
Gametes?		
Offspring		
Best suited to		
Two examples		

D3.1.2 Meiosis and the fusion of gametes

Textbook pp. 694–695

What would happen to the chromosome number in each generation without meiosis?

Explain how meiosis and fertilization each create new combinations of alleles.

D3.1.3 How the male and female sexes differ

Textbook p. 695

	Male gamete	Female gamete
Movement		
Relative size		
Food reserves		
Numbers made		

How do these differences lead to different reproductive strategies?

D3.1.4 The human reproductive systems

Textbook pp. 695–697

Draw a side view of the **male-typical** system. Label **testis, epididymis, sperm duct, seminal vesicle, prostate gland, urethra, penis, scrotum**. Add one function for each.

Draw a front view of the **female-typical** system. Label **ovary, oviduct, uterus, endometrium, cervix, vagina**. Add one function for each. Check that each oviduct opens into the space inside the uterus.

D3.1.5 The ovarian and uterine cycles

Textbook pp. 698–700

Hormone	Secreted by	Effects, including on the other hormones
FSH		
LH		
Oestradiol		
Progesterone		

Give one example of **positive feedback** and one of **negative feedback** in the cycle.

Sketch the four hormone levels across 28 days. Below them, show what happens in the ovary and in the uterus. Mark ovulation and menstruation.

D3.1.6 How fertilization happens in humans

Textbook p. 701

Put these events into a sequence: *joint mitosis gives two diploid nuclei; membranes of sperm and egg fuse; sperm tail and mitochondria are destroyed; chromosomes condense; nuclear membranes break down; sperm nucleus enters the egg.*

Where does fertilization usually take place? Why do the mitochondria of a person come only from their mother?

D3.1.7 Hormones in IVF

Textbook pp. 701–702

Stage	Hormone or drug used	Why
Down-regulation		
Superovulation		
Final maturation		
Before and after implantation		

Why are normal hormone secretions suspended first? What is one risk of placing several embryos in the uterus?

Before you finish

Tick the ones you can explain without notes. Circle anything to ask about.

- ☐ Advantages of each type of reproduction
- ☐ How variation arises in a sexual life cycle
- ☐ Why gametes differ in size and number
- ☐ The anatomy of both systems
- ☐ What each of the four hormones does
- ☐ Positive and negative feedback
- ☐ What triggers ovulation
- ☐ What triggers menstruation
- ☐ The events of fertilization
- ☐ How hormones are used in IVF