

Sex (Gender): Who's Responsible, & Why?!

By Kathy Feinstein, Cheltenham High School, Wyncote, PA

Objective:

Students will understand the process of meiosis (reduction-division), how gametes are formed, how gender is determined, and what the structure and function of the SRY gene is.

Utilizing: Sex Lecture #1

Animation **A** (meiosis & recombination)

Pre-Teach: vocabulary (cell structure/function, chromosome, chromatid, centromere, haploid, diploid, autosome, sex chromosome, crossing over/gene "swapping")

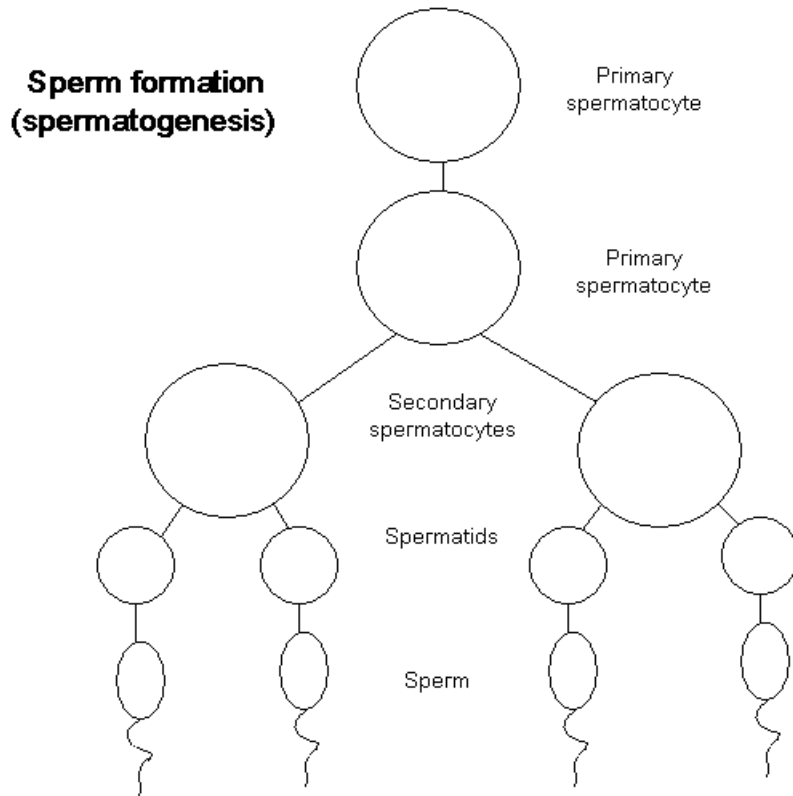
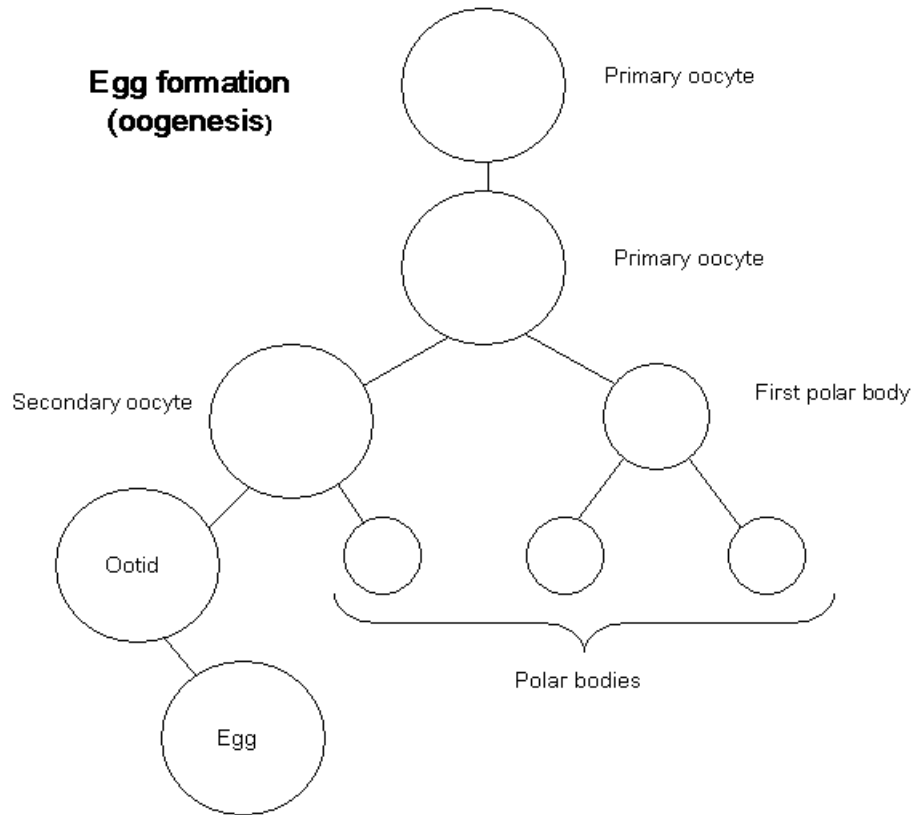
Ability Level: Academic/Honors (may be modified to include simple gender determination for modified/reading students)

Methods/Materials:

- 1) After students have concepts of cell structure and function, move on to cell division (mitotic), then meiosis (reduction-division). This lecture and animation/video clip could be used to introduce and teach about meiosis and gamete formation, including the similarities and differences between spermatogenesis and oogenesis.
- 2) Learning could be enhanced with diagrams of primary spermatocytes and primary oocytes, as they are completed together so students have practice manipulating chromosome number going from diploid to haploid.
- 3) Review key concepts of Lecture **#1** and animation **A**
- 4) Assessment: Students will demonstrate understanding of meiotic process relative to chromosome number by completing a blank chart (see below), and drawing chromosomes in proper numbers and forms. (Diagram may be copied and enlarged for student use.)

Simplified diagrams of egg and sperm formation. Use the following diagrams to indicate changes that occur during meiosis. Refer to your text to help you identify the stages.

Draw 2 pairs of chromosomes (use a different color for each) in the first stage of gamete formation. Mark one chromosome of each pair A and one B.



Standards Addressed:

State (PA): 3.1.10 (E)
3.3.10 (A)
3.3.10(C)

National: Content Standard C
Teaching Standards A & B