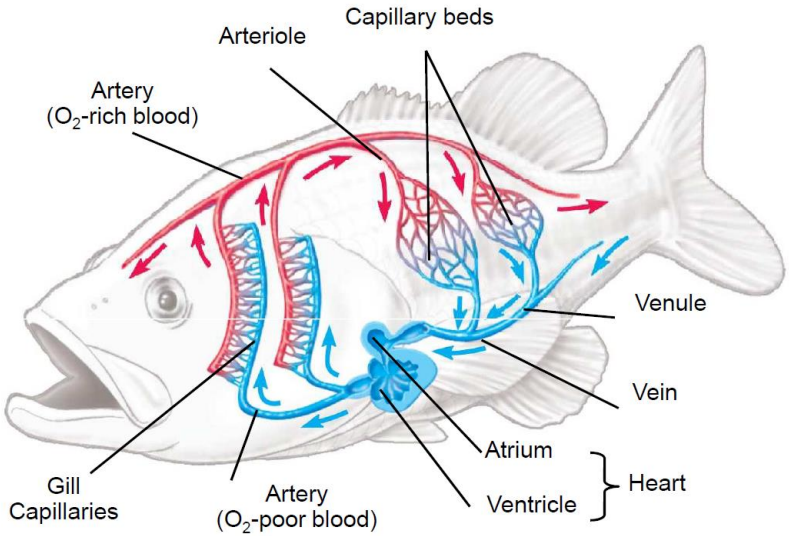
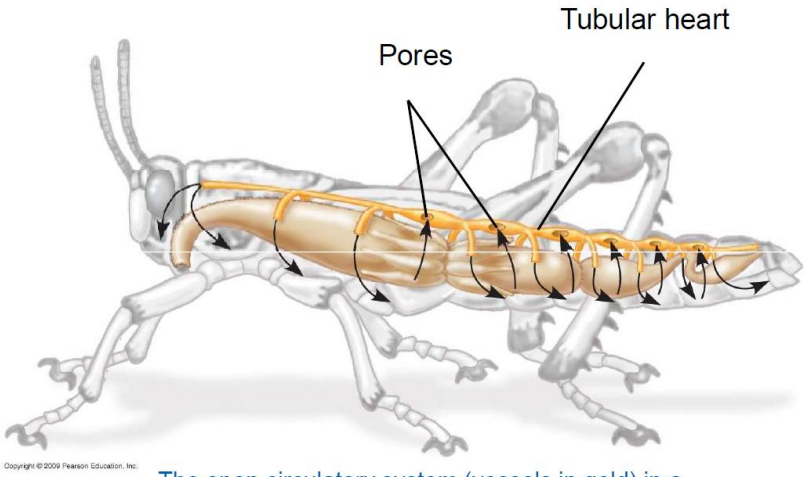
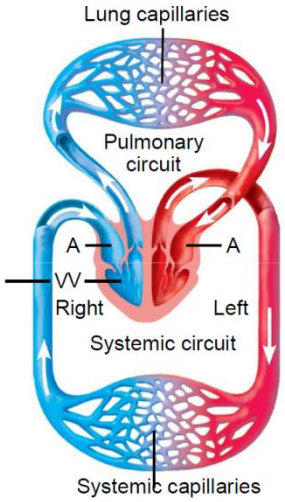


The closed circulatory system in a fish

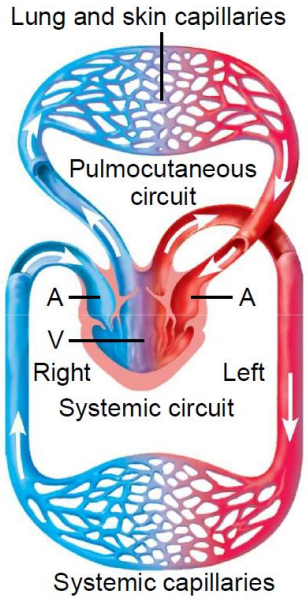


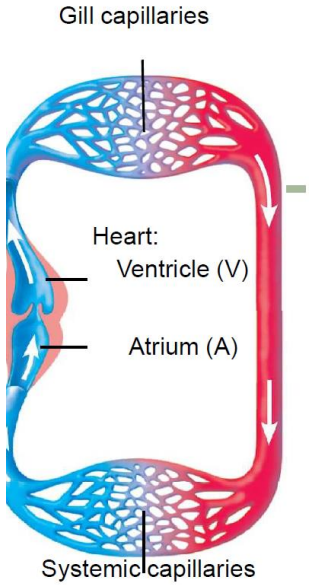
The open circulatory system (vessels in gold) in a grasshopper

The double circulation and four-chambered heart of a bird or mammal

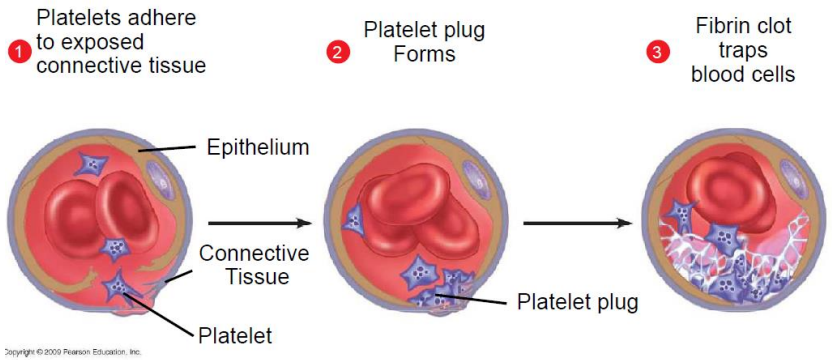


The double circulation and three-chambered heart of an amphibian



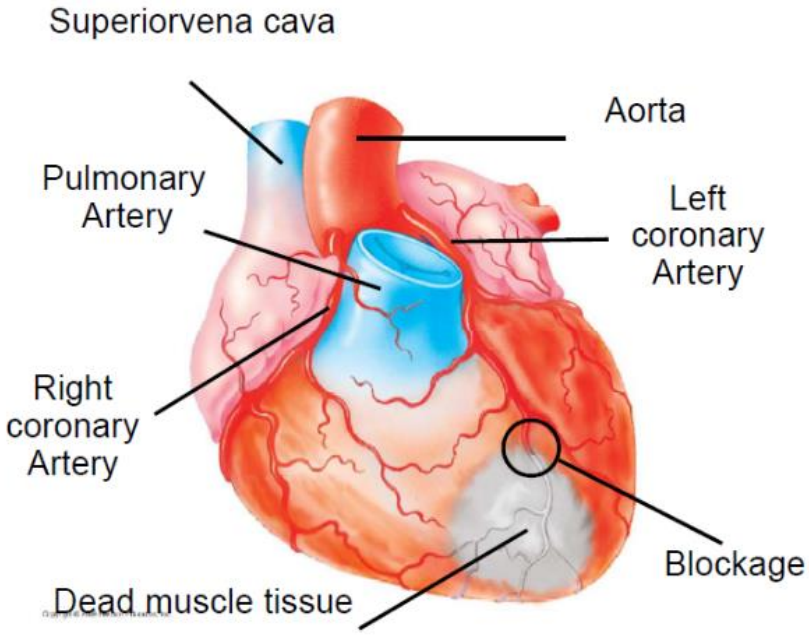


Two-chambered heart

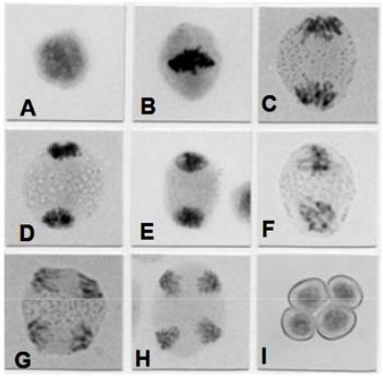


The blood-clotting process

A fibrin clot

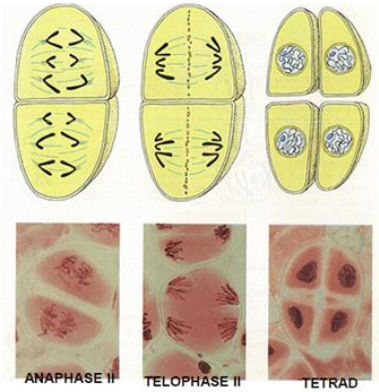


Blockage of a coronary artery, resulting in a heart attack

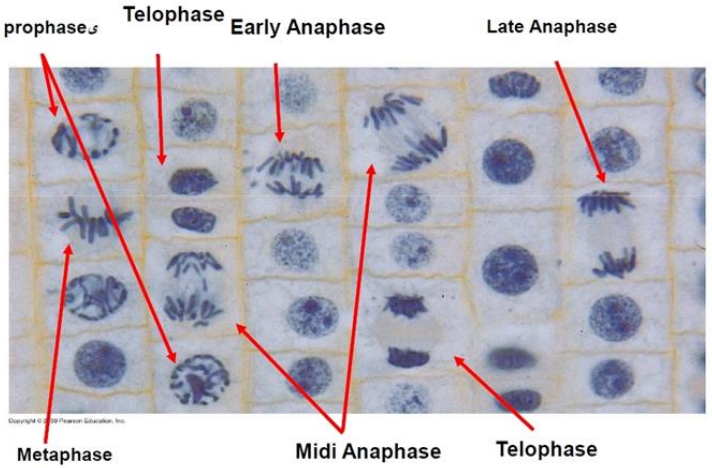


A. PROPHASE I
B. METAPHASE I
C. ANAPHASE I
D. TELOPHASE I
E. PROPHASE II
F. METAPHASE II
G. ANAPHASE II
H. TELOPHASE II
I. TETRAD

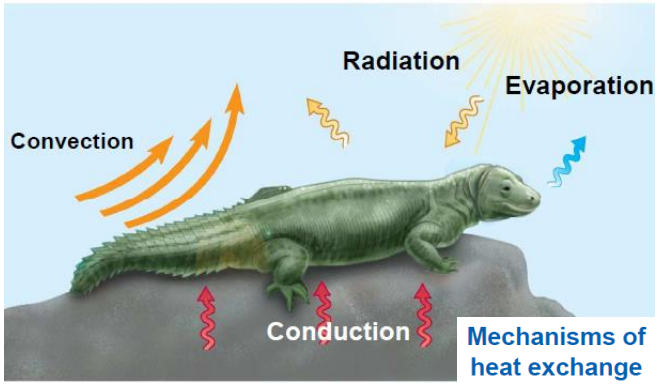
MEIOSIS

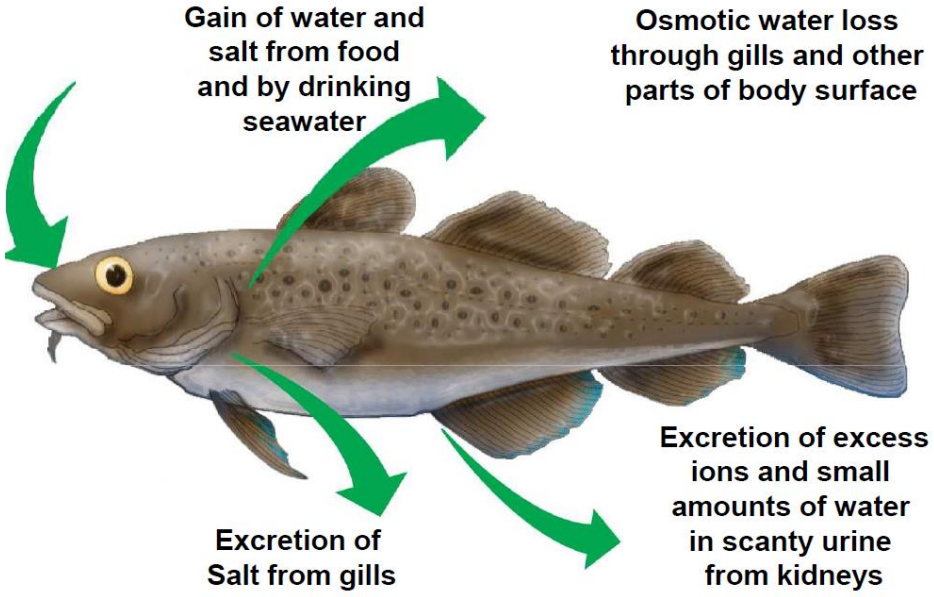


Mitosis

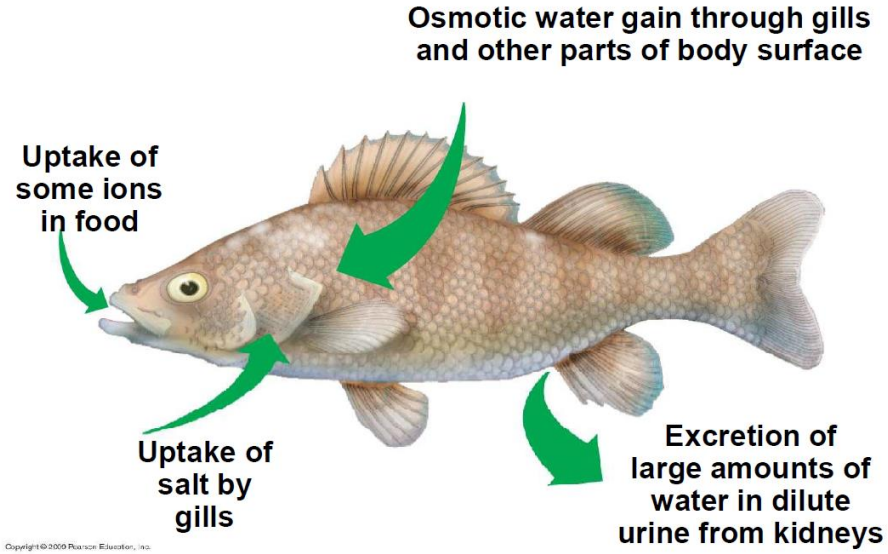


Thermoregulation **Circulatory adaptations**
Large ears in elephants





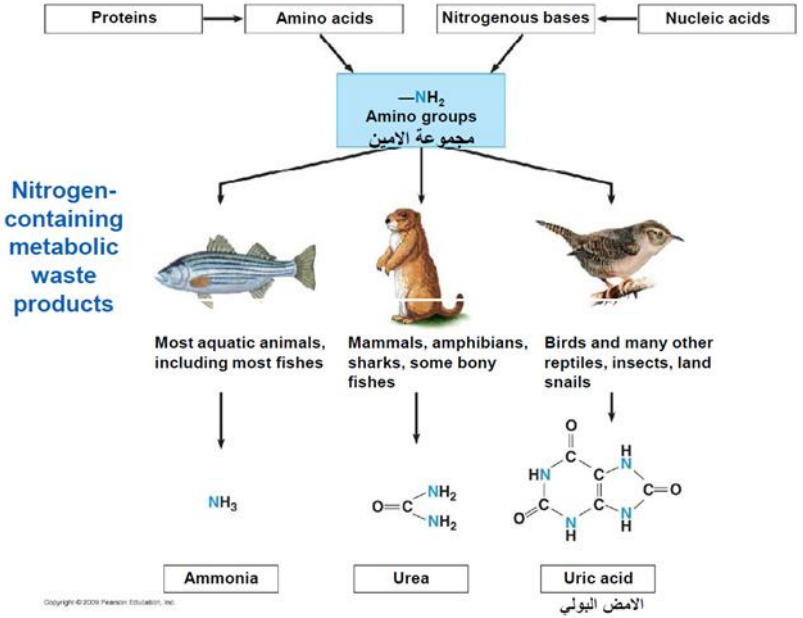
Osmoregulation in a cod, a saltwater fish

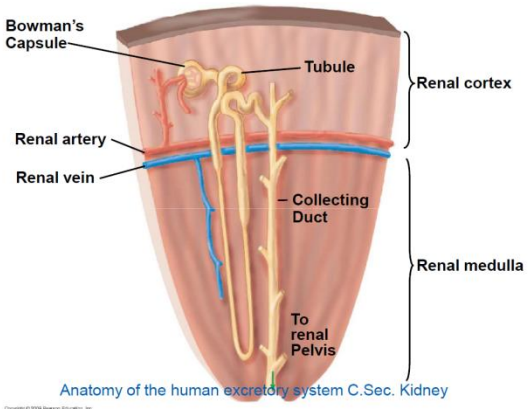


Osmoregulation in a perch, a freshwater fish

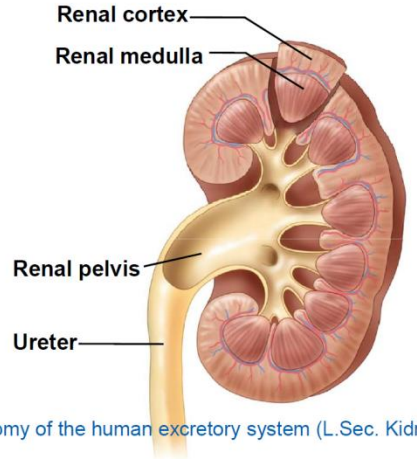
ally i

Asexual reproduction of an aggregating sea anemone (Anthopleura elegantissima) by fission



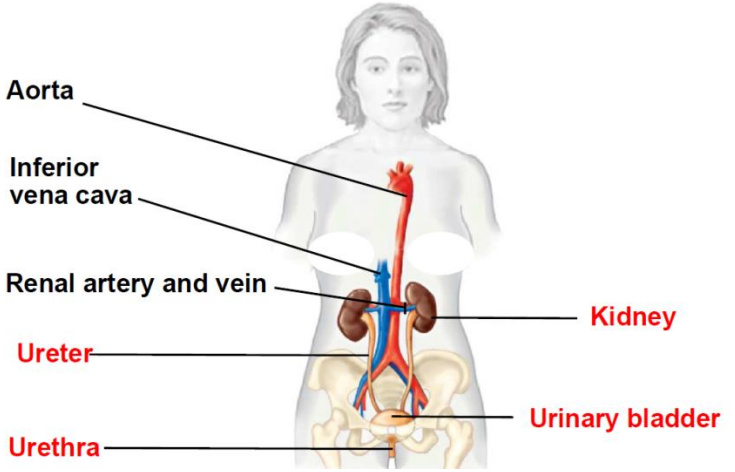


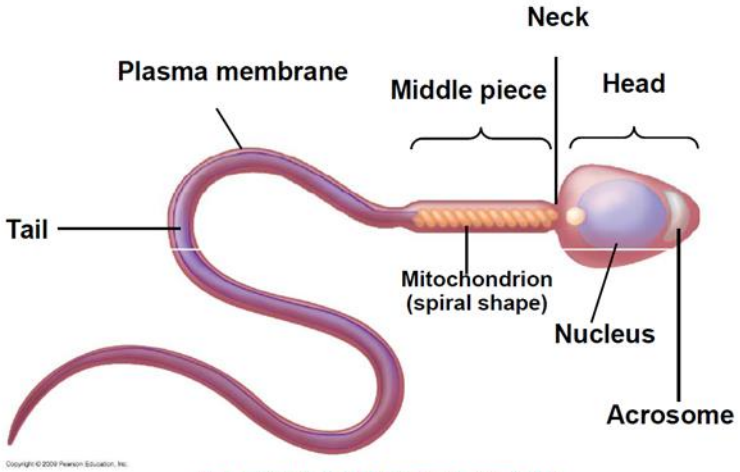
Anatomy of the human excretory system C.Sec. Kidney



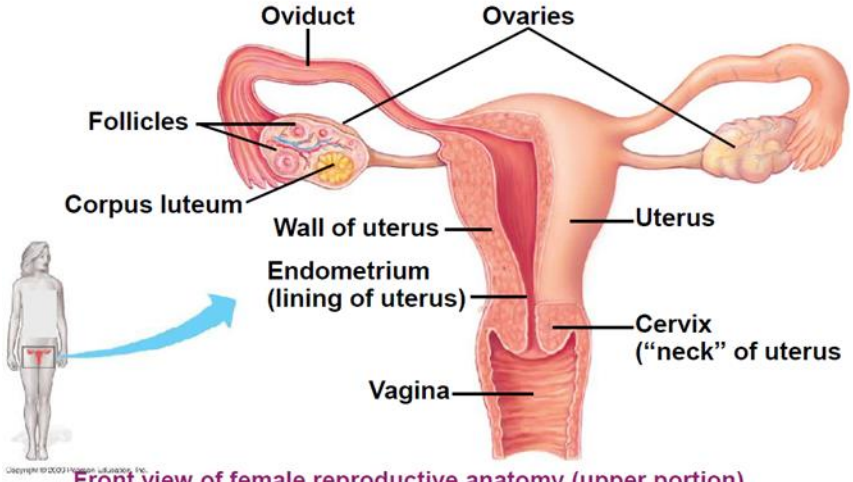
Anatomy of the human excretory system (L.Sec. Kidney)

Anatomy of the human excretory system

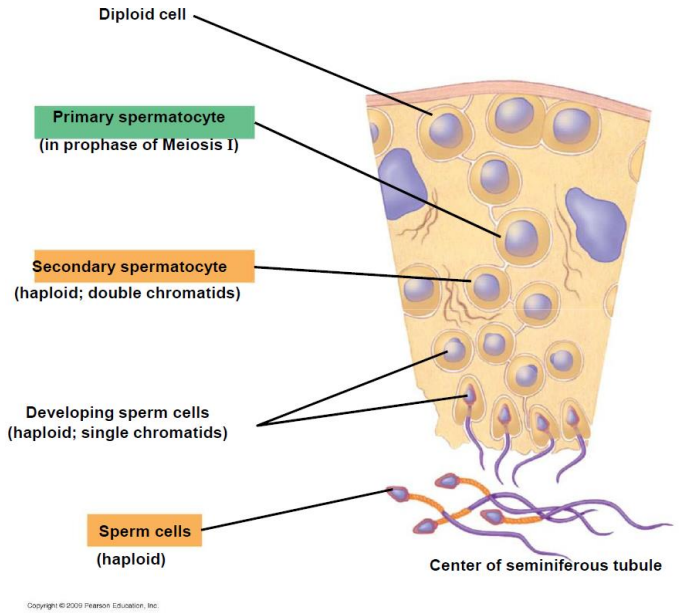


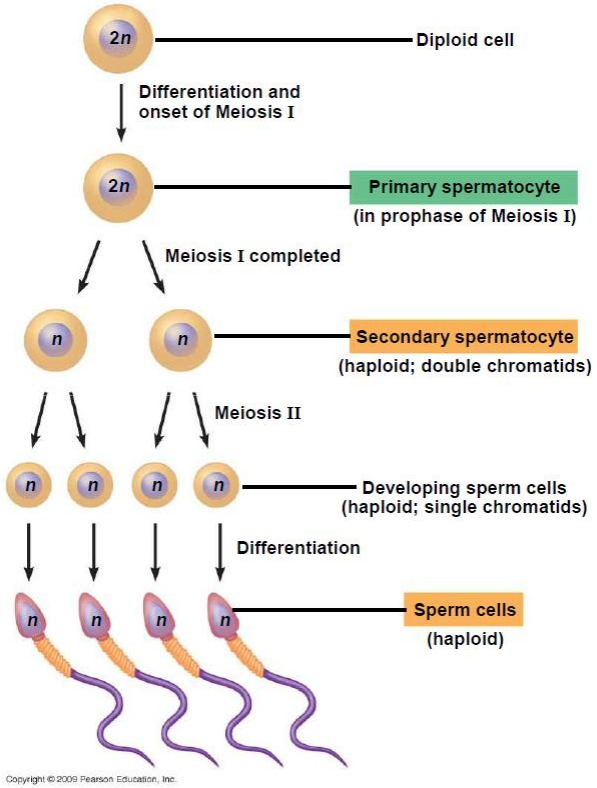


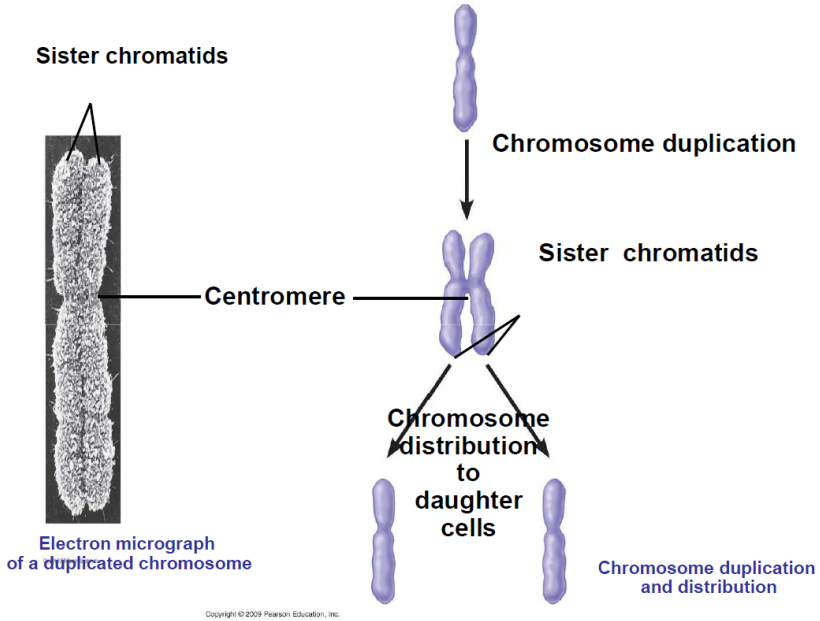
The structure of a human sperm cell



Front view of female reproductive anatomy (upper portion)






Sister chromatids
Chromosome duplication
Sister chromatids
Centromere
Chromosome distribution to daughter cells
Electron micrograph of a duplicated chromosome
Chromosome duplication and distribution
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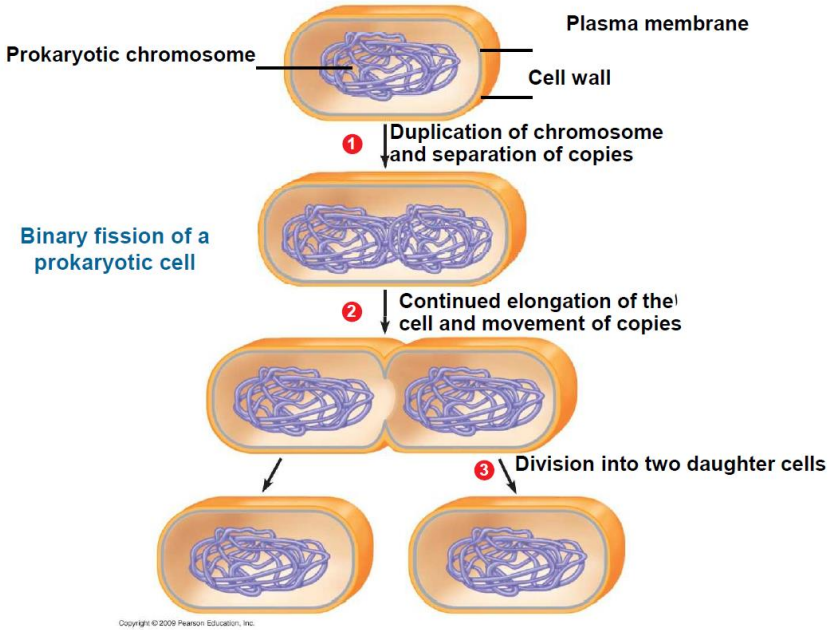
Prokaryotic chromosome
Plasma membrane
Cell wall
1
Duplication of chromosome and separation of copies
Binary fission of a prokaryotic cell
2
Continued elongation of the cell and movement of copies
3
Division into two daughter cells
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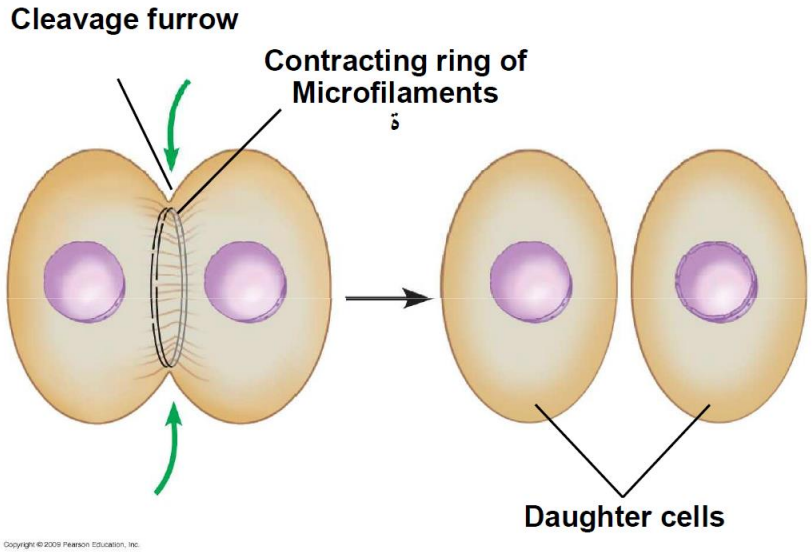
Cleavage furrow
Contracting ring of Microfilaments
Daughter cells
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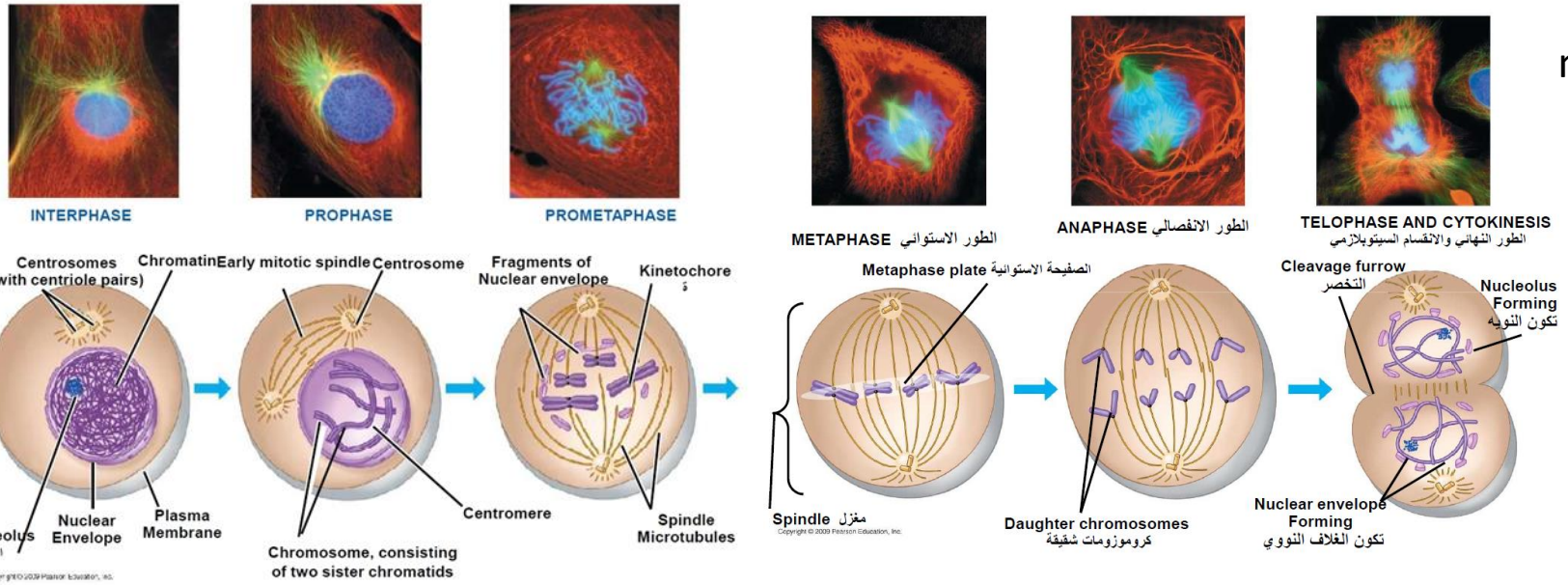
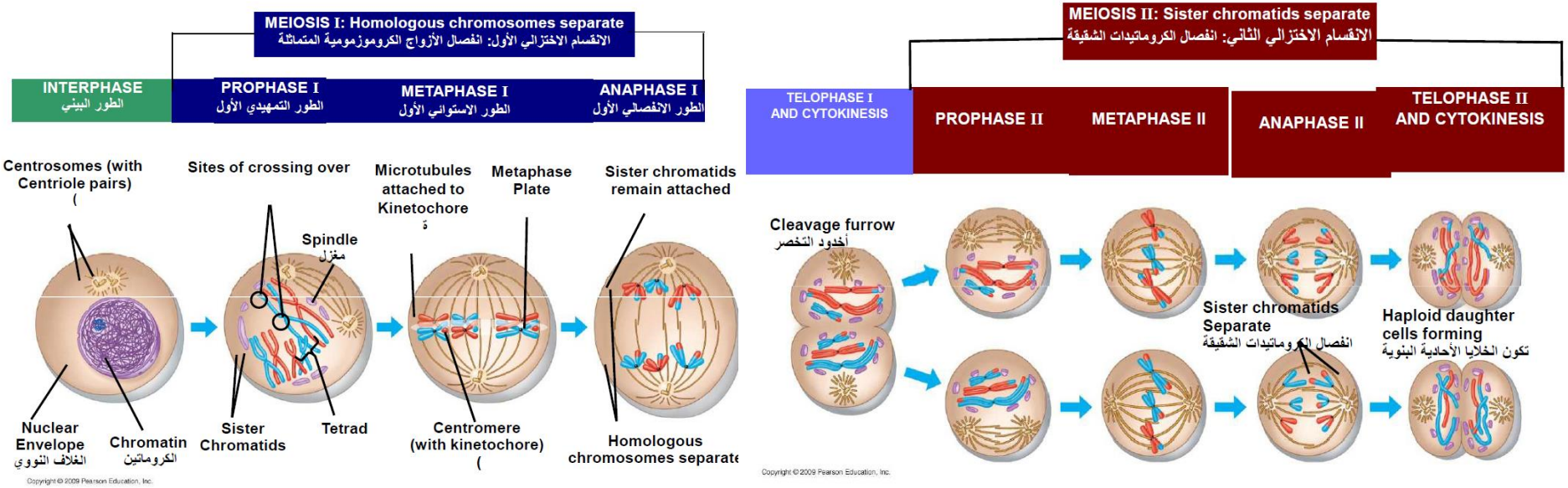
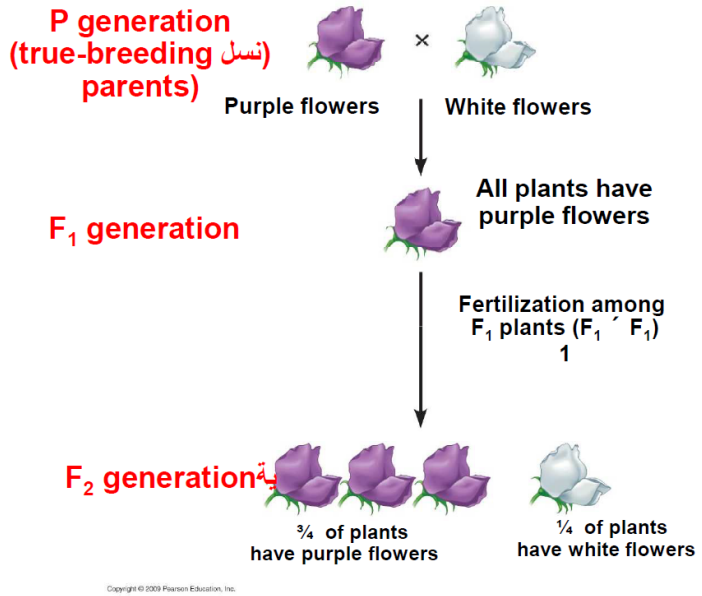
metosis





The stages of miosis I

The stages of miosis II

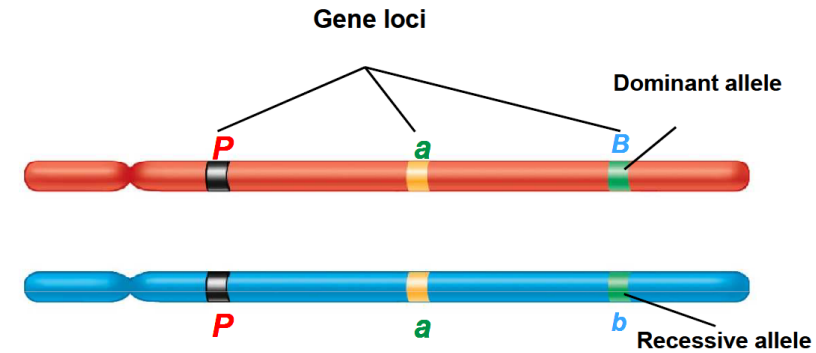


Crosses tracking one character (flower color)

Character الصفة	Dominant Trait الهيئة السائدة	Recessive Trait الهيئة المتنحية
Flower color	Purple	White
Flower position	Axial	Terminal
Seed color لون البذرة	Yellow أصفر	Green أخضر
Seed shape شكل البذرة	Round مستدير	Wrinkled مجعد
Pod shape شكل قرن البذور	Inflated كاملة	Constricted مُخصره
Pod color لون قرن البذور	Green خضراء	Yellow صفراء
Stem length طول الساق	Tall طويل	Dwarf قصير

The seven pea characteristics studied by Mendel

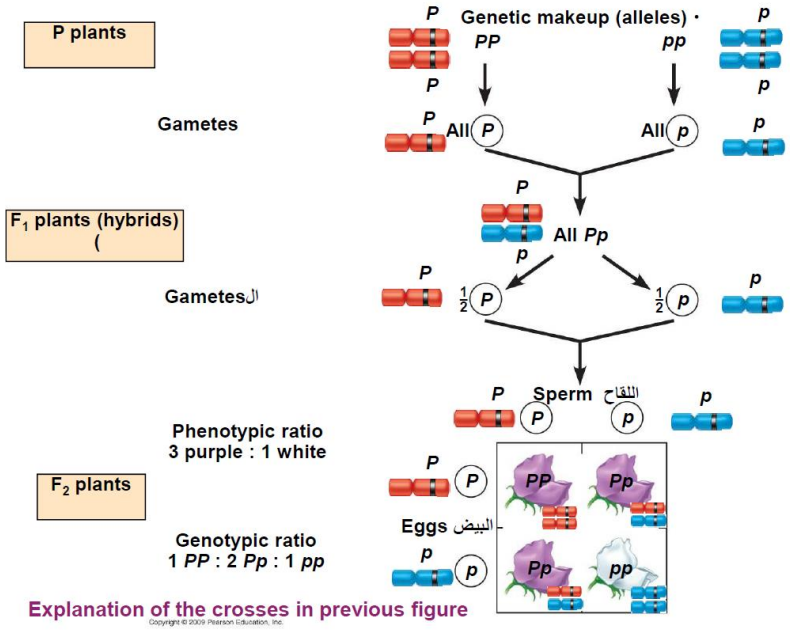
الصفات السبعة التي درسها مندل



Genotype:

PP	aa	Bb
Homozygous for the dominant allele	Homozygous نقي للأليل المتنحي for the recessive allele	Heterozygous خليط

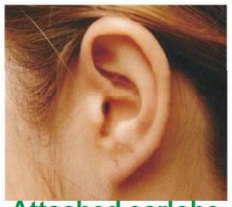
Matching gene loci on homologous chromosomes



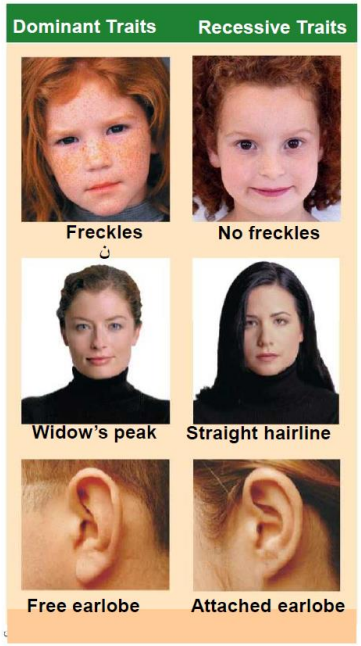
Explanation of the crosses in previous figure

Examples of single-gene inherited traits in humans

	Dominant Traits	Recessive Traits
Genotype	*FF or Ff*	*ff*
Phenotype	Free earlobe	Attached earlobe



Examples of single-gene inherited traits in humans



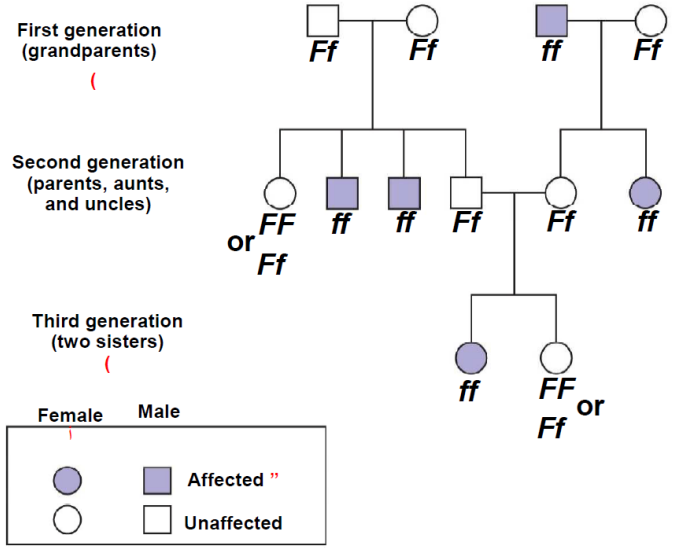
Parents Normal *Dd* × Normal *Dd*

Sperm

Eggs	*D*	*d*
D	*DD* Normal	*Dd* Normal (carrier)
d	*Dd* Normal (carrier)	*dd* Deaf

Offspring

Offspring produced by parents who are both carriers for a recessive diorder



Pedigree showing inheritance of attached versus free earlobe in a hypothetical family

- **X-Y system in mammals, fruit flies**
  - XX = female; XY = male

= XY ; أ = xX ▪

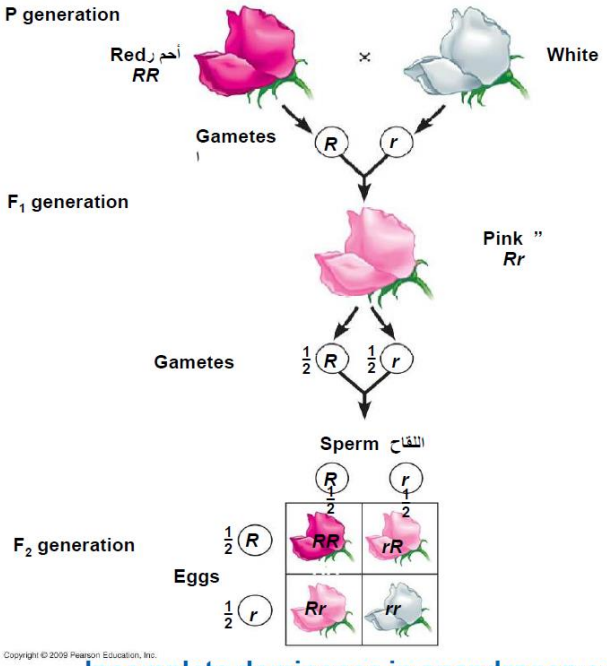
- **X-O system in grasshoppers and roaches**
  - XX = female; XO = male

= XO ; = XX ▪

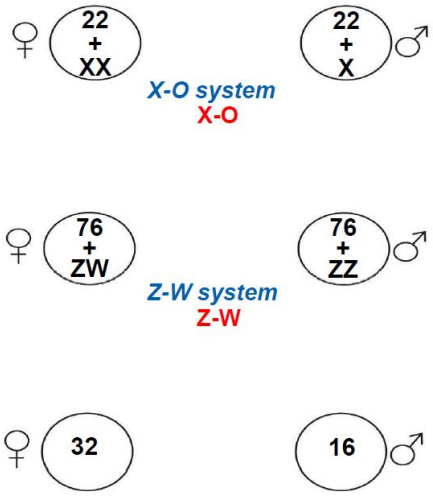
- **Z-W in system in birds, butterflies, and some fishes**
  - ZW = female, ZZ = male

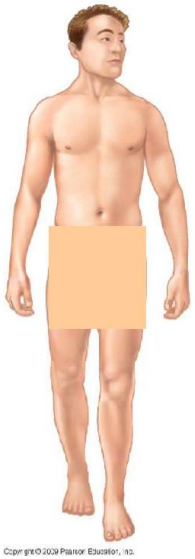
= ZZ =ZW ▪

- **Chromosome number in ants and bees**
  - Diploid = female; haploid = male



Incomplete dominance in snapdragon color





X-Y system