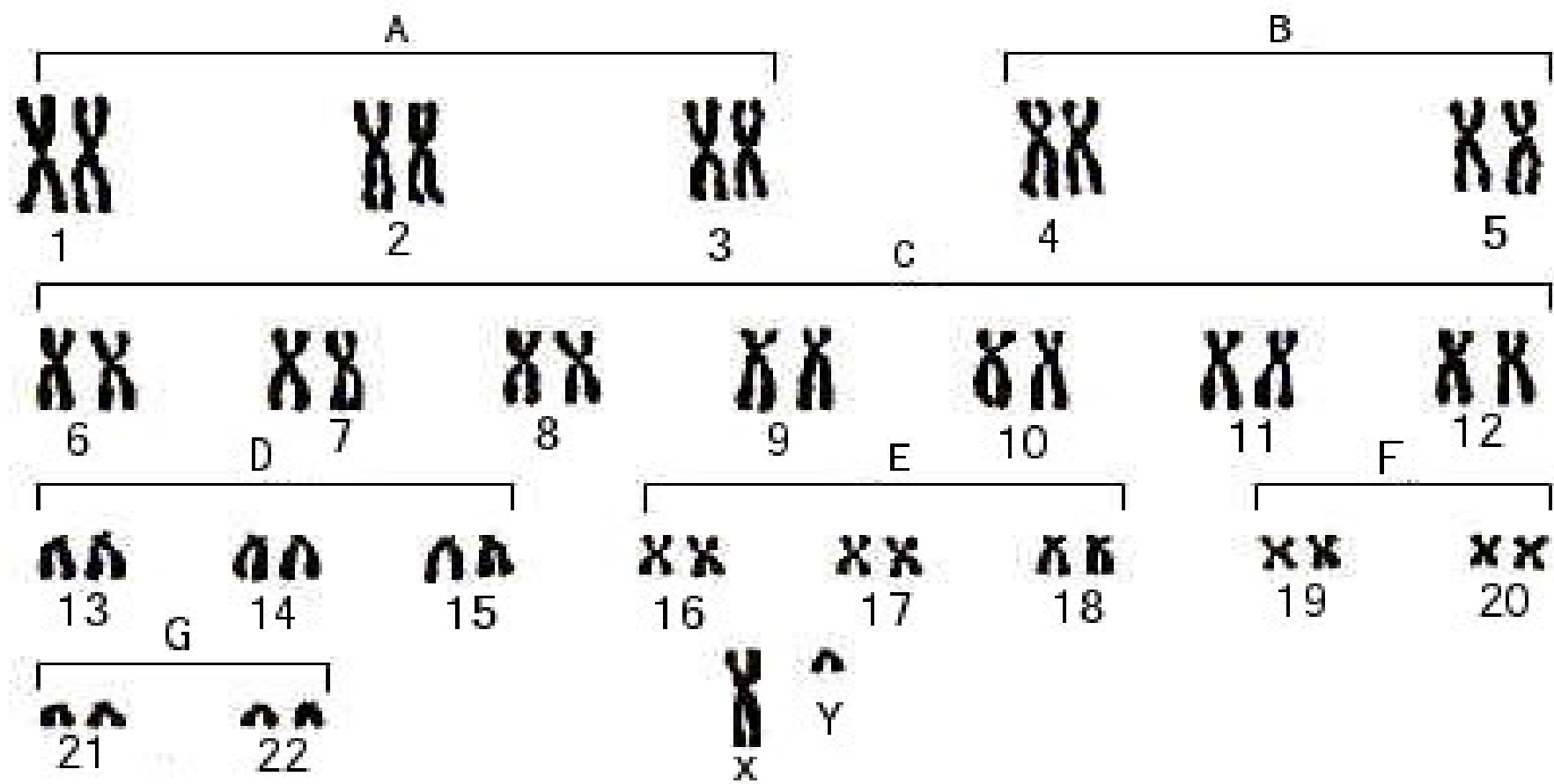


Meiosis

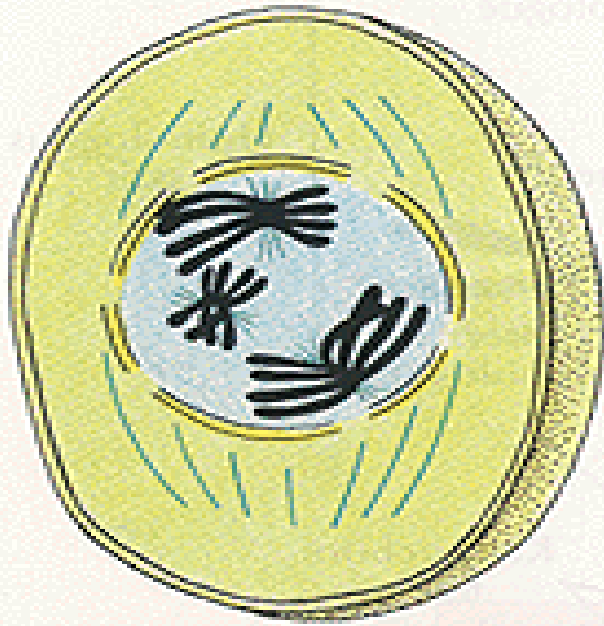
P.Gait 2005

Also known as **reduction division** as the chromosome number is halved



- Humans contain 46 pairs of chromosomes in their cells
- These can be arranged in pairs according to their size and shape
- Meiosis insures that each new sex cell only has one copy from each homologous pair. Meiosis therefore takes place only in the sex organs i.e. the ovaries and testes

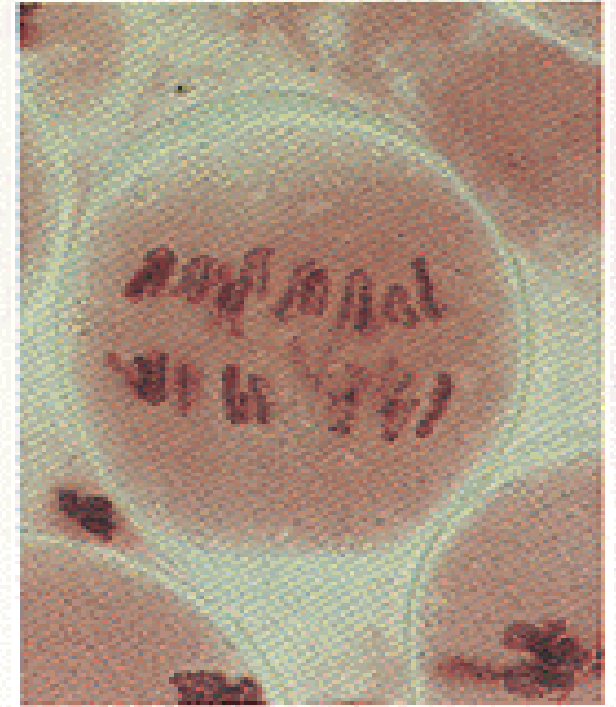
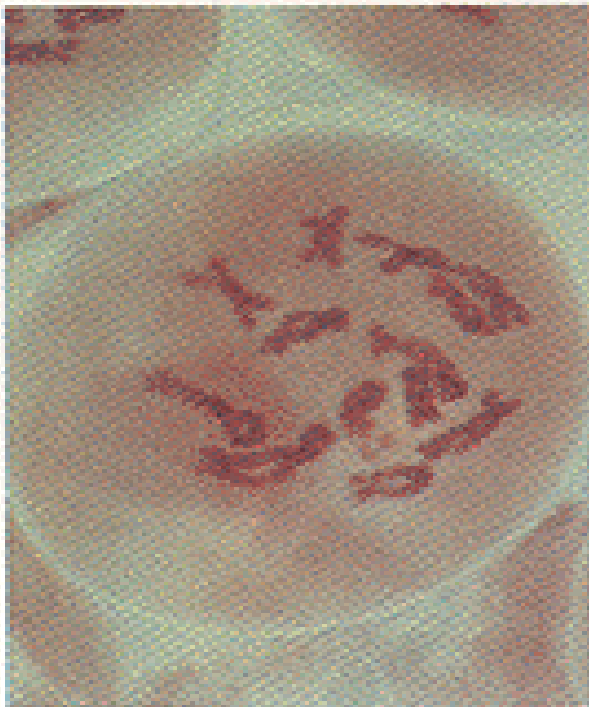
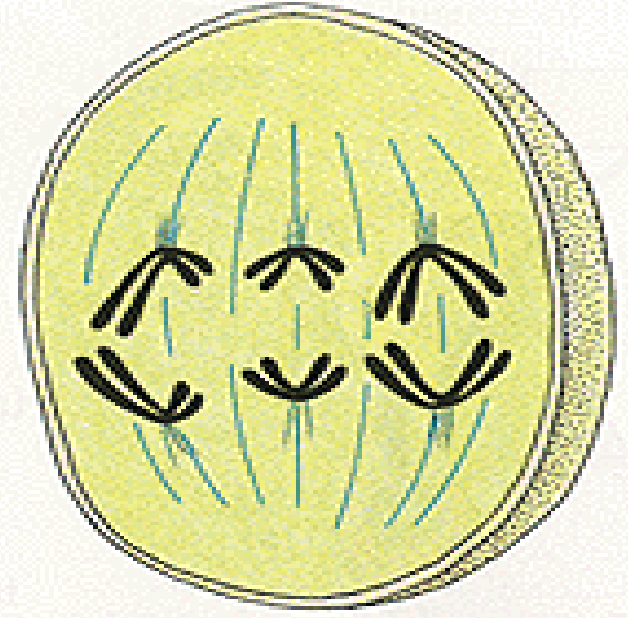
(a) Late prophase I

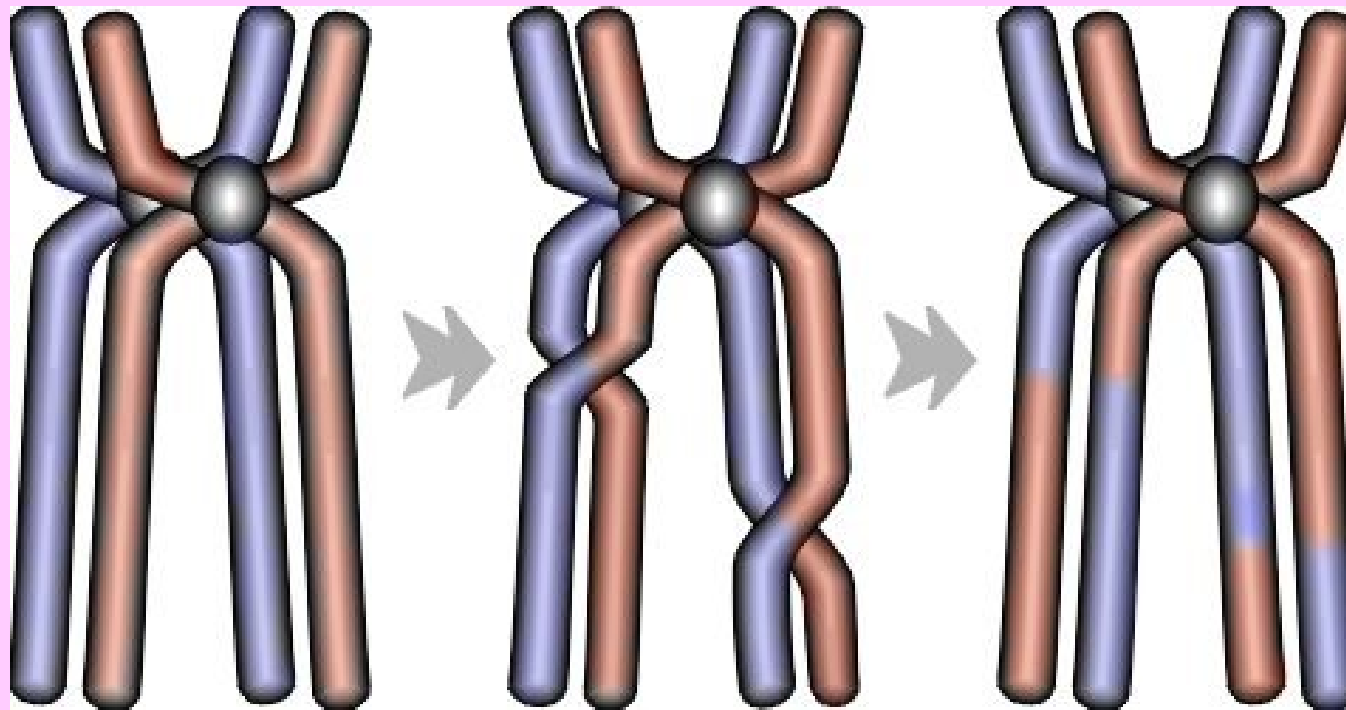


(b) Metaphase I



(c) Anaphase I

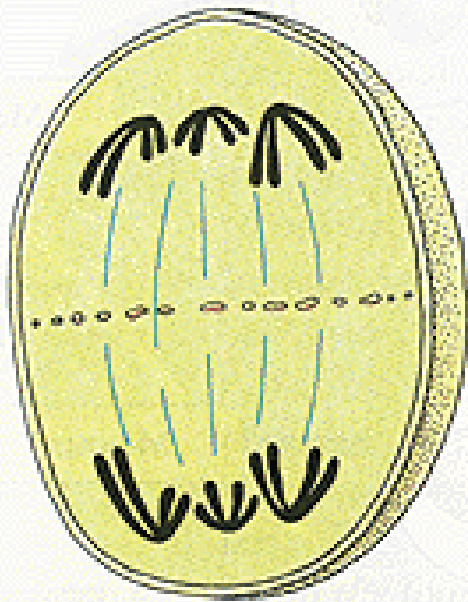




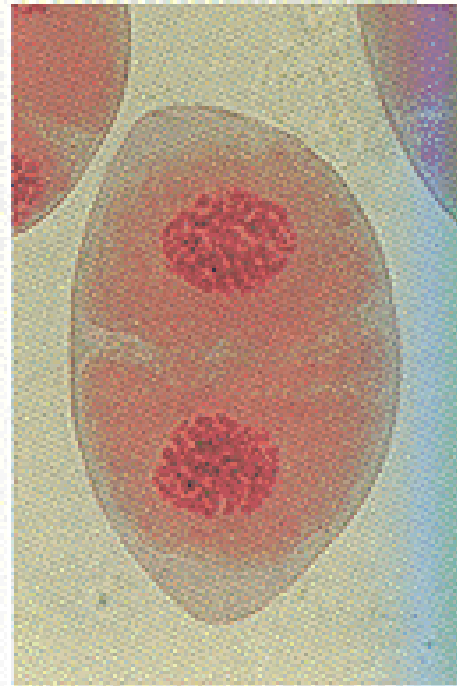
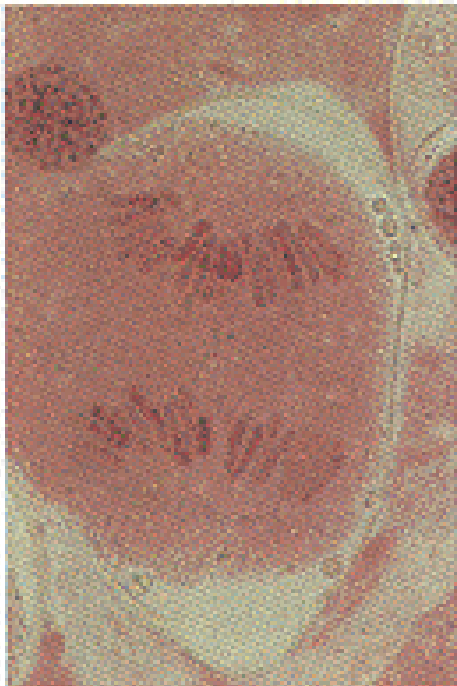
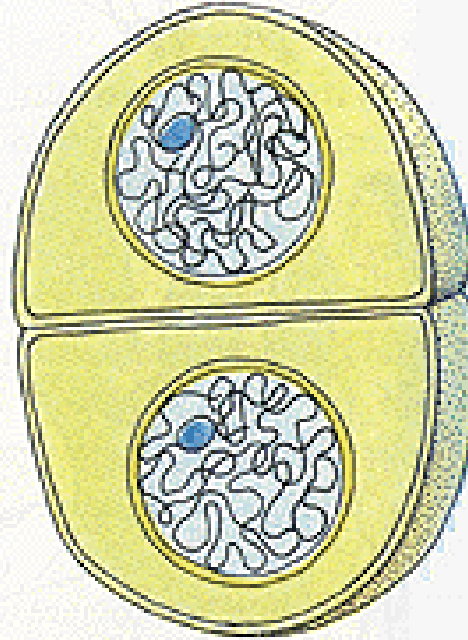
During metaphase I homologous chromosomes are paired and lie close to each other. Genetic material is swapped between chromosome pairs.

This is another method by which more variation can be introduced. The whole purpose of meiosis is to introduce variation during sexual reproduction

(d) Telophase I



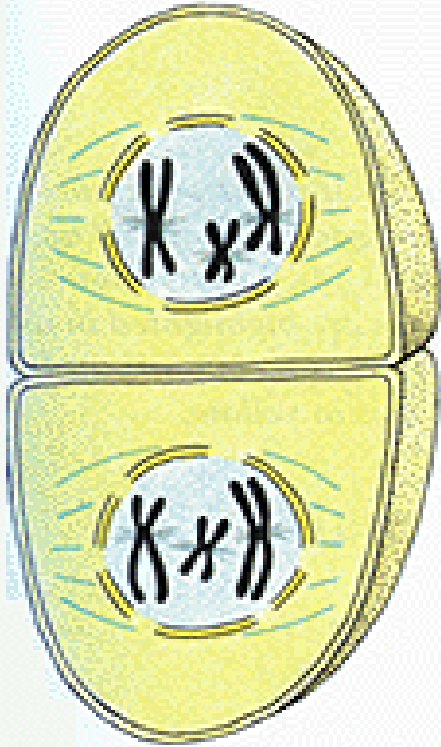
(e) Interphase II



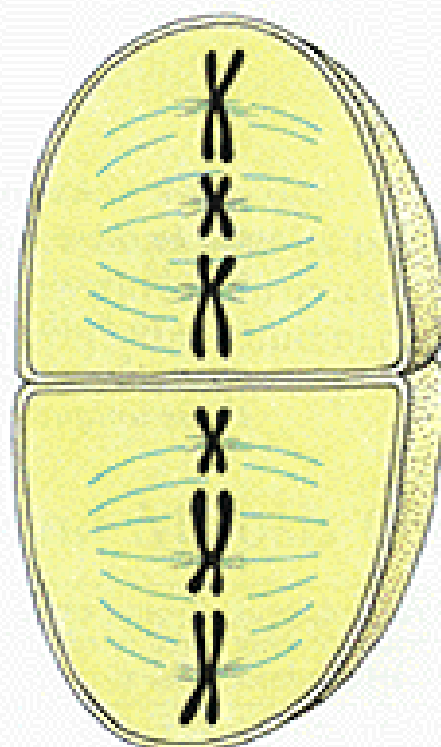
Depending on the species separate nuclei may or may not be formed during interphase II

Often the cell will enter the second phase of meiotic division straight away

(f) Prophase II



(g) Metaphase II

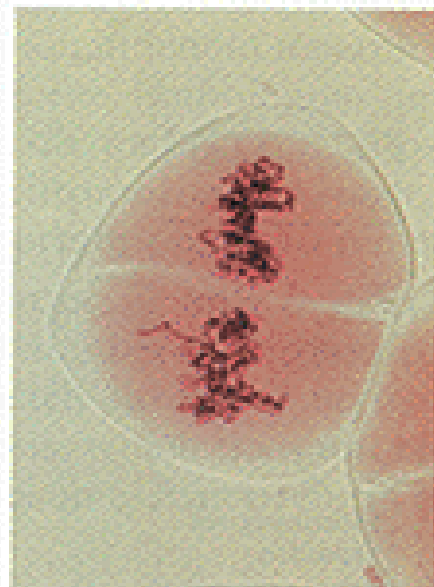
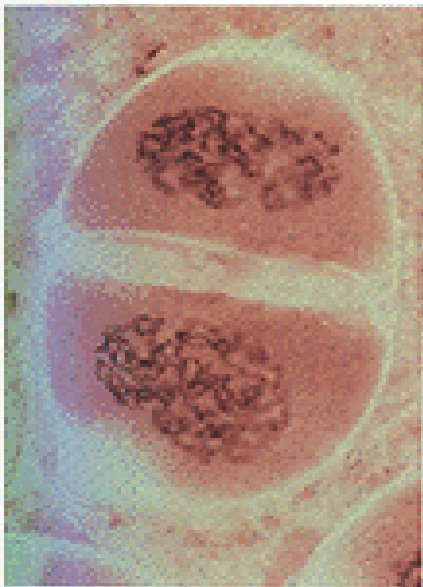


Prophase II

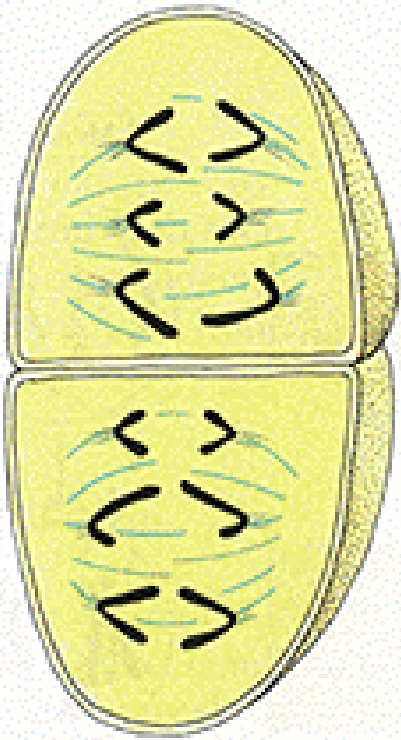
- Chromosomes become visible again
- Nuclear membrane disappears
- Spindle starts to form

Metaphase II

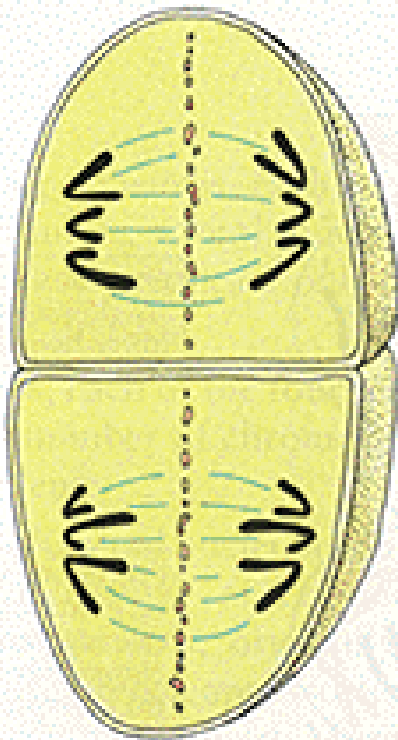
- Bivalents become attached to the spindles at the metaphase plate by means of their centromeres



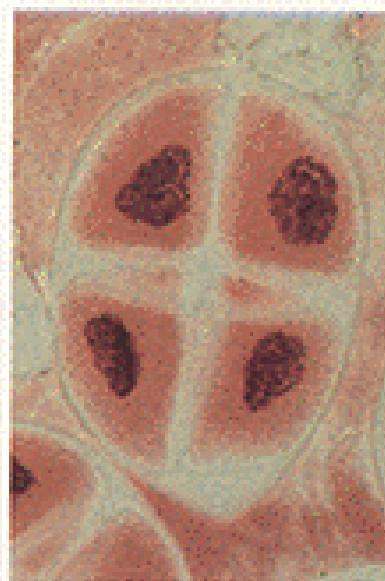
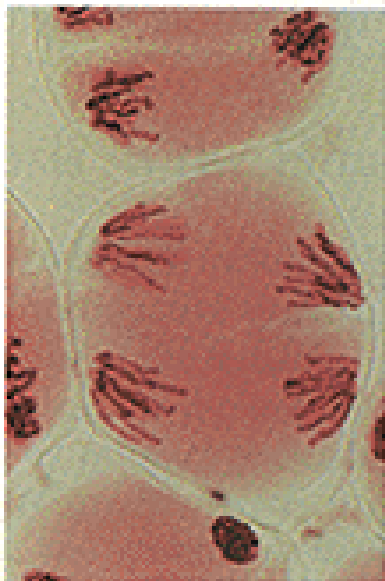
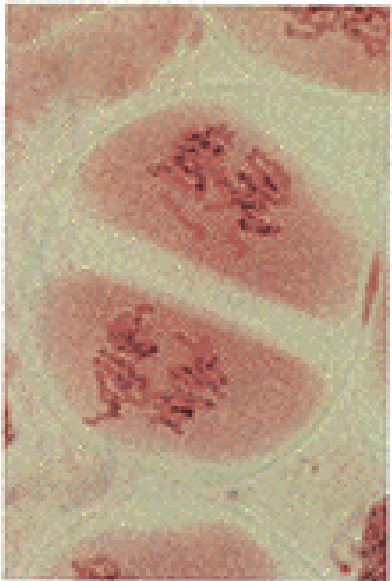
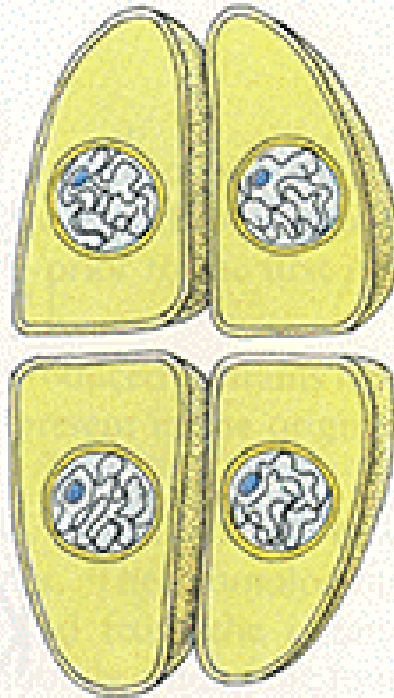
(h) Anaphase II



(i) Telophase II



(j) Cytokinesis



25 μ m

Ultimately four new gametes will be formed all of which will have the haploid or half number of chromosomes

