

Meiosis

How is meiosis LIKE mitosis? How is it different? – see comparison charts...

What is Gametogenesis?

Meiosis has two major stages. Which is the reduction stage? WHY and when does it occur?

What is the purpose of interphase in meiosis?

There are two major outcomes of meiosis...what are they?...what do they mean?

During recombination, synapsis occurs. What is synapsis? What does recombination mean?

What happens during synapsis and why is this important?

Define TETRAD

Define HOMOLOGOUS...Where do homologous chromosomes come from?

What phase does recombination / crossing over occur?

How is Metaphase I the SAME as mitosis...HOW IS IT DIFFERENT?

When does SEGREGATION occur? WHAT IS THE SIGNIFICANT IMPORTANCE

In Anaphase I are the sister chromatids still together?...are they identical now?

In Telophase I are the new cells haploid or diploid?

Does cytokinesis occur once or twice in the whole meiosis?

Meiosis II is very SIMILAR to mitosis.

What is the total end result of meiosis as far number of cells produced from the one original?

Genetic variation in meiosis is accomplished by 3 basic ways. What are they?

What is independent assortment?

During Anaphase I or II if the chromatids or chromosomes do not separate equally into the newly formed cells, what word describes this situation?

What is an example of the above?

What is a karyotype chart?

ALTERATION OF GENERATIONS

Plants and some other organisms can exist in both haploid or diploid stages. This is known as an **alteration of generations**.

NOTE TO THOSE STUDYING THIS...what is important here is not necessarily memorizing the life cycle of a fern but rather being able to interpret what is going on in any life cycle when given an image. (eg) being able to recognize where the organisms are “2n” or “n” and which is the sporophyte and gametophyte stages.

In plants, the diploid stage is called a **Sporophyte** and the haploid called **Gametophyte**

For example, in a fern life cycle, what is the “n” number during the sporophyte stage? What does this mean?

What is the “n” number during the gametophyte stage in the fern life cycle?

In the fern life cycle (as well as a similar idea in some other organisms) there is an extra “stage” during the reproduction phase. In ferns, what is the growing heart shaped part of this stage that produces the egg and sperm called? Is it diploid or haploid? Where did it come from?

Regardless of which organism you view, be it a fern, sea sponge, pine tree, human being, what is the chromosome number of gametes (eggs or sperm)?