Nov7

Bio 3

Ch6: chromosomes and cell division

* continuity and variety
* exam on the 31

learning objectives

- fission

- mitosis

- meiosis

- eukaryotic cell cycle

- understand and be able to describe the different types of cell division

There are different types of cell division.

* there are two fundamentally different ways that cells and organis,s can reproduce:
* mitosis and asexual reproduction via binary fission
* meiosis and sexual reproduction

Prokaryotes divide by binary fission

* binary fission results in two genetically identical daughter cells
* the end results of binary is you get two identical genetical cells from one

eukaryotic cells

* 2 kinds of cell division
* in somatic cells, mitosis each somatic have two copies of cell, one from your mom and the other from your dad. They reproduce by mitosis
* in gametes, meiosis, only have one copy. Starts from two copies and goes down to one.

Cell cycle

* Interphase: most of the cells life is interphase
* 2 events in interphase. 1 growth, return to original size after division. 2. DNA replicates, to get ready for mitosis? Cell division
* mitosis/ cell division. Pro, meta, ana, telo
* 80% time is spent in interphase, 1 grow, 2 copy DNA. 20% divides and that’s mitosis.

Overview

* mitosis leads to duplicate ells.
* Parent cells-> daughter cells

Mitosis

* to enable cells to generate new genetically identical cells
* there are two different reasons fro this need: 1 growth 2 replacement
* the number of (somatic) cells that must be replaced by mitosis everyday is huge.
* The rate at which mitosis occurs vary

The detail

* mitosis is a 4 step process
* preparation for mitosis: the chromosomes replicate
* prophase- nuclear membrane breaks down. sister chromatids (replicated chromosomes) condense. Spindle forms
* interphase- chromosomes replicate in preparations for mitosis
* Metaphse- sister chromatids line up at the center of the cell.
* Anaphase- sister chromatid pairs are pulled apart by the spindle fibers. One full set of chromosomes goes to one side of the cell and another identical set goes to the other.   
  Telophase- the chromosomes begin to uncoil as the nuclear membrane reassembles around them. The cell begin to pinch in half. Cytokinesis is the slit.
* Know this for exam!