

Cell Division & Mitosis

How are histones used with DNA?

What is chromatin (what does it look like)?

When chromatin condenses, what does it create?

What part of the cell contains all the genetic information?

Describe or what is the shape of DNA?

Chromosomes that have already been duplicated often take on this "letter shape"

What does a chromosome look like before it duplicates?

Chromatid...what are they?

Where do we find **sister chromatids**?

Humans have _____ number of chromosomes in their body cells.

How many pairs of chromosomes do we have?

What chromosome (which pair number) determines our sex?

What is the size of the "Y" chromosome compared to the "X"?

Autosome...what are they?

Homologous Chromosomes (**important term**)- what are they?

(they are similar but NOT IDENTICAL)...why?

An **allele** is a different form of the same gene (eg) one gene on one chromosome may be blue eyes and on another chromosome it is for brown eyes.

What is a somatic cell?

Diploid vs haploid (**important terms**)

-what cells in our body diploid and which are haploid?

Do all organisms have the same diploid or haploid numbers?

Polyploidy... What does it mean?

When does a chromatid become a chromosome? **Answer...** During anaphase or when separated from the "X" shape

What kinds of cells does mitosis replicate?

How many are produced from 1 cell? Haploid or diploid?

What kinds of cells does meiosis replicate?

How many are produced from 1 cell? Haploid or diploid?

What are the 3 stages of the CELL CYCLE?

3 stages of Interphase?

What happens in the "S" phase of interphase?

What form is DNA in during interphase?

The 4 phases of Mitosis

"I Proclaim All Men Are Toads"...know this to remember order of mitosis stages and generally what is happening in each

1. PROPHASE (prepare) – what is happening in this stage in regards to...?

- a. centrioles
- b. nuclear membrane
- c. spindle fibers
- d. chromatin

2. METAPHASE (middle) – what is happening in this stage in regards to...?

- a. chromosome location...

3. ANAPHASE (apart) -- what is happening in this stage in regards to...?

- a) centromeres
- b) movement of chromosomes

4. TELOPHASE (tear into two) – what is happening in this stage in regards to...?

- a. chromosome location
- b. chromosomes turn into????
- c. Spindle fibers
- d. Nuclear membrane

What happens in the stage CYTOKINESIS? When does it occur?

What stage does a cell spend most of its time in?

Normal cell division vs CANCER CELLS...what is the difference?

CLONING

What is a clone?

Compare natural human clones vs plant clones

What is PARTHENOGENESIS?

Basic process of laboratory cloning (ie) cloning a sheep

What cells can be used to clone?

STEM CELLS

What is so special about stem cells?

3 places stem cells can be obtained?

What are possible uses of stem cells in research or medicine?

What is the issue with using embryonic stem cells for research?