

What is the relationship between a gene, DNA, chromosome and trait?

A gene is a section of DNA.
DNA coiled up is a chromosome
When DNA is expressed you get traits

What macromolecule is responsible for our functional traits?

Protein



Get Chromebook-

How do cells make new cells?

Cells double their DNA and organelles and then split into 2. (Mitosis)

Get out homework packet

How are cancer cells different than regular cells?

Cancer cells divide out of control and do not function normally.

Objective: The student will identify the parts of the cell cycle

Agenda: Warm Up

Cell Cycle and Cancer Video

Draw out Mitosis

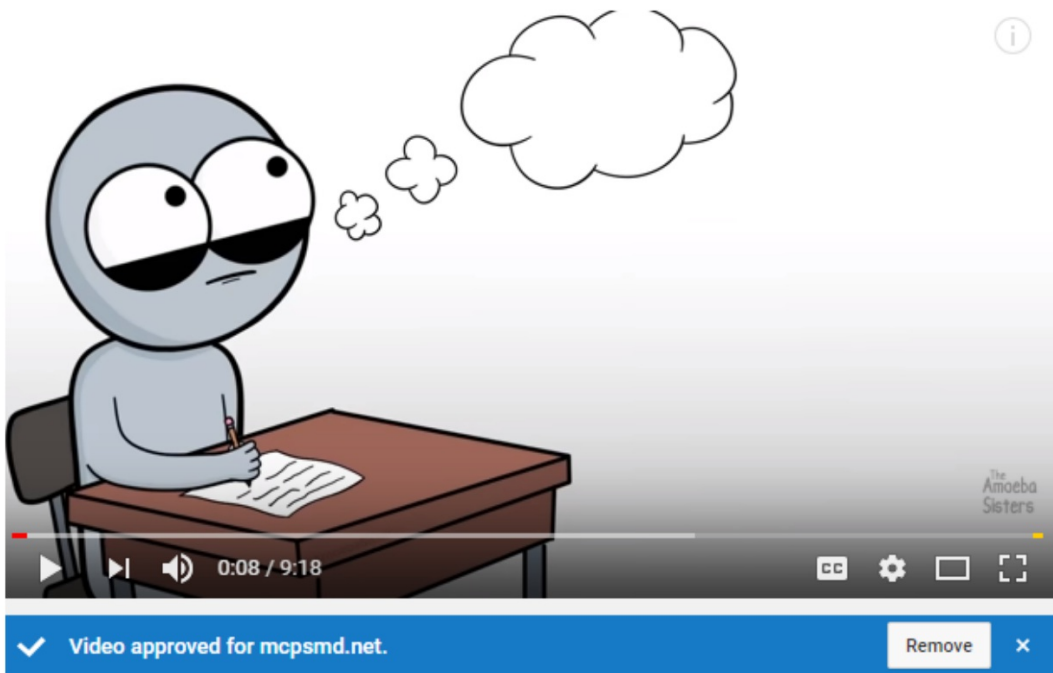
myMCPS exit Card

Read CK-12 Article on Weebly

To turn in: DNA reading

Homework: Read CK-12 article on cell cycle and answer 6 review questions from the article.

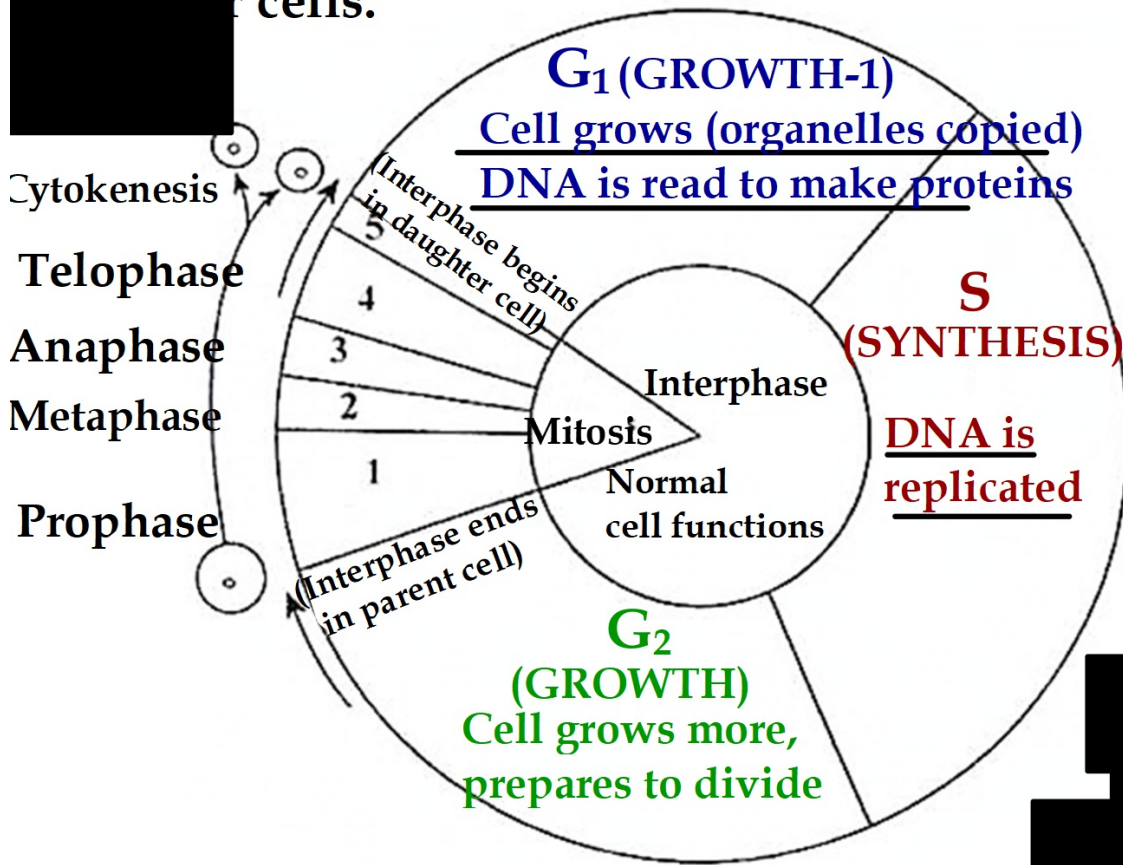
Answer these on the back of cell cycle notes



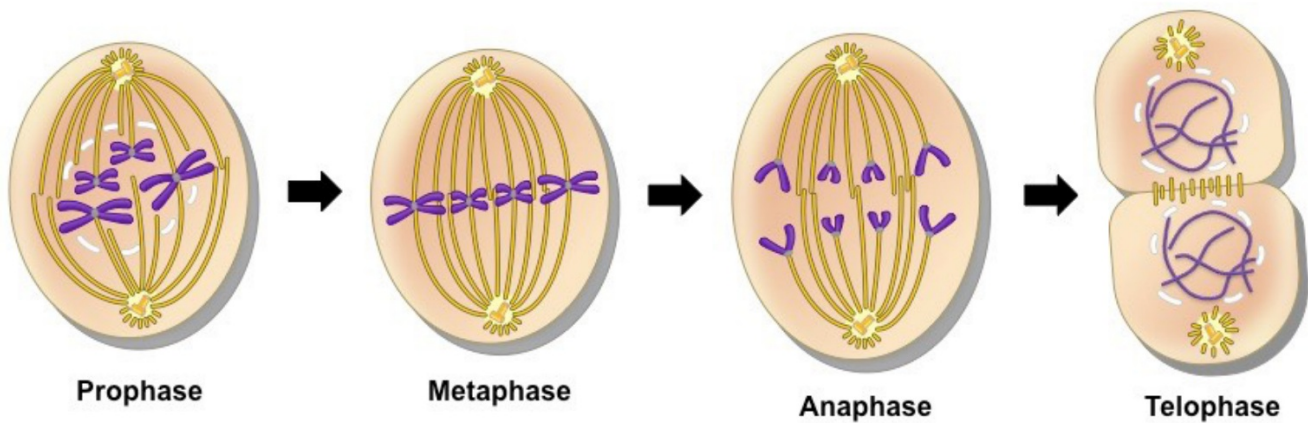
The Cell Cycle (and cancer) [Updated]

As you watch this video listen for information that explains why it is a problem is cells divide without checkpoints.

Cell cycle: the series of events that take place in a cell to copying its DNA and division to produce 2 cells.



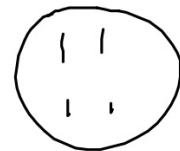
Mitosis: Division of a parent cell resulting in 2 identical daughter cells



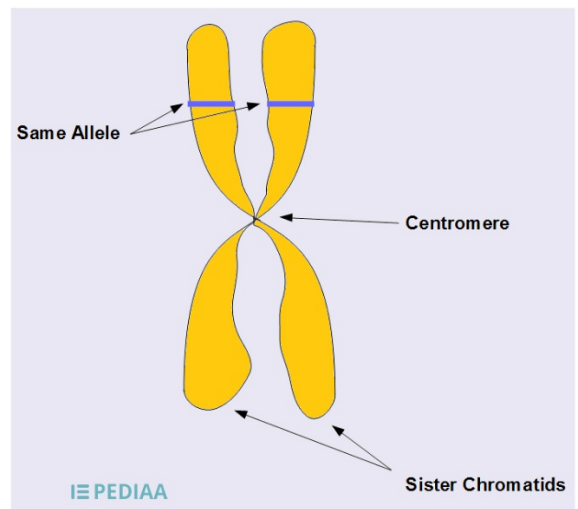
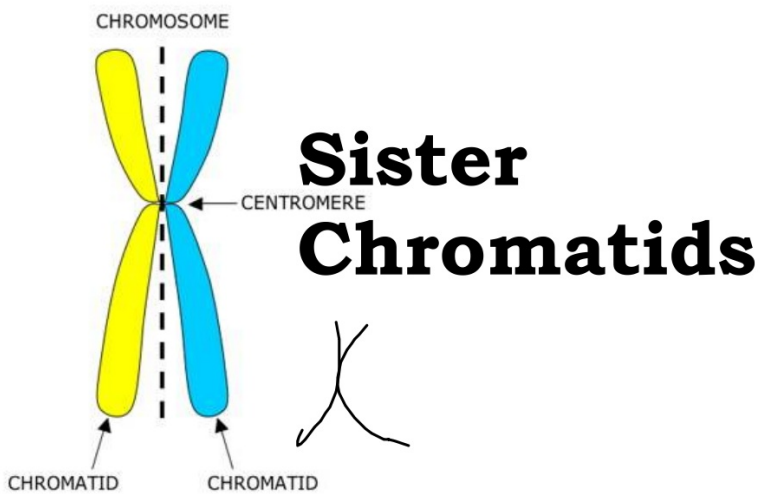
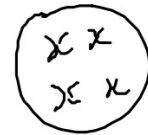
Stages= PMAT

What is a chromosome?

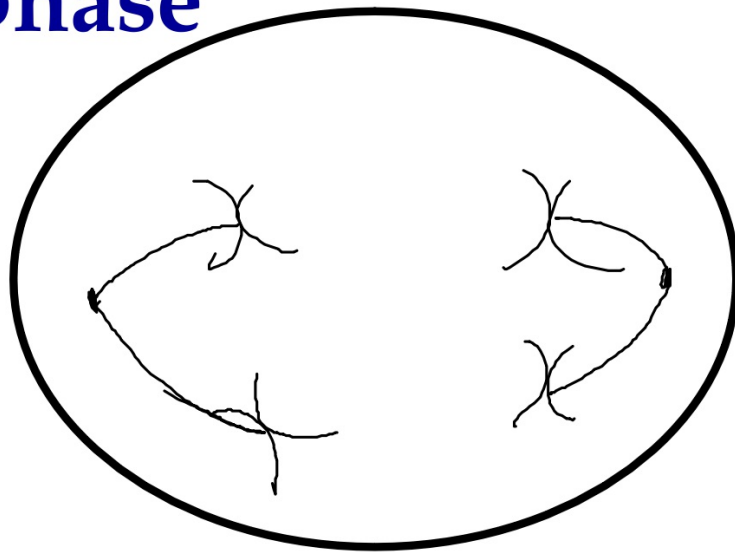
) = **chromosome**



X = **chromosome**



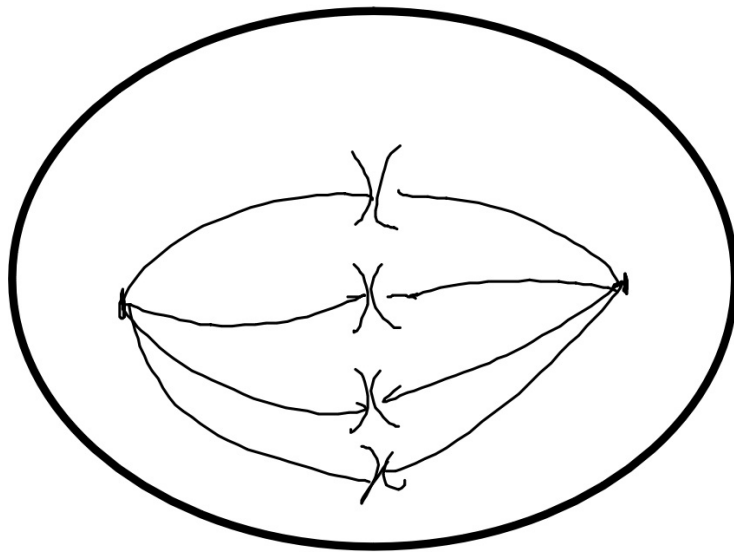
1. Prophase



- DNA coils into chromosomes
- Nuclear membrane breaks down
- spindle fibers form

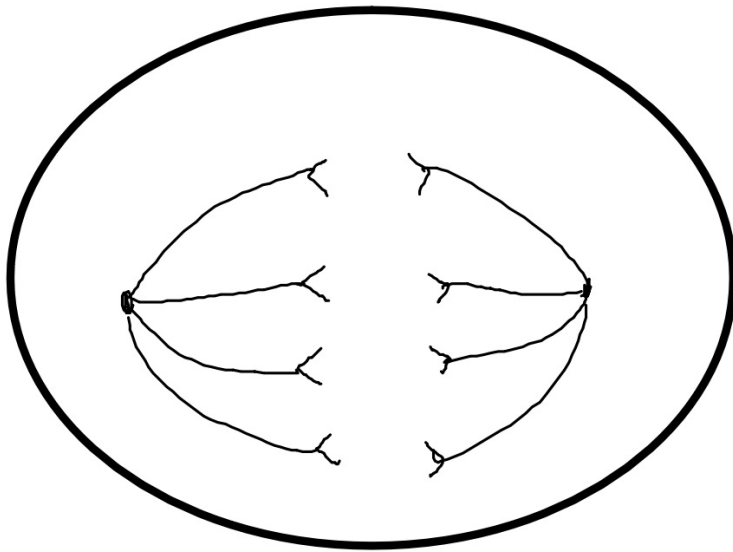


2. Metaphase

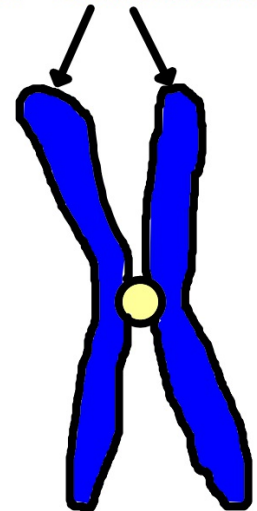


- Chromosomes line up in the MIDDLE of the cell

3. Anaphase

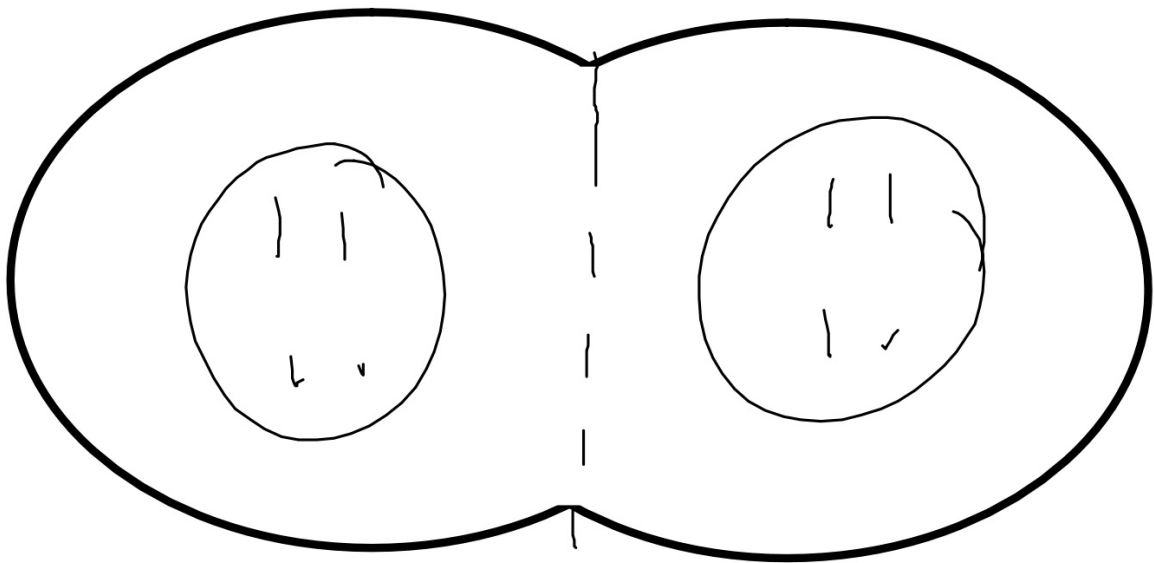


Sister Chromatids



- Sister Chromatids are pulled APART to either end of cell

4. Telophase (and Cytokinesis)

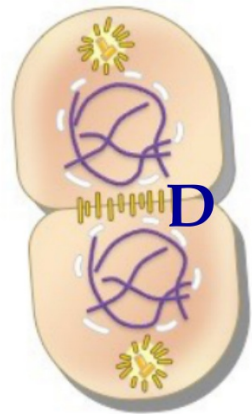
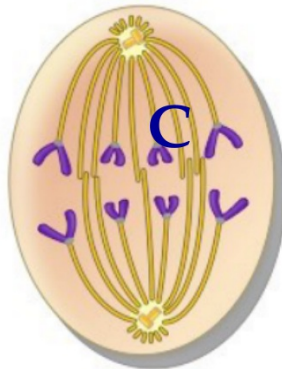
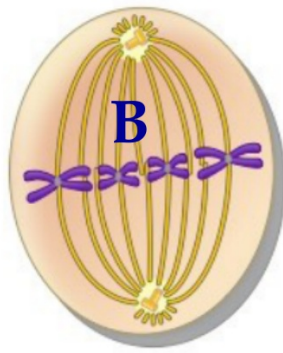
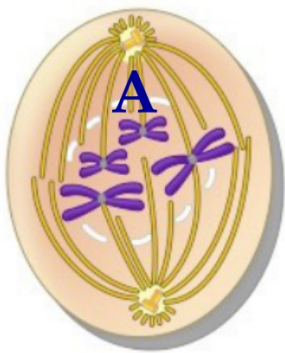


- Nuclear membrane reforms
- Chromosomes uncoil into chromatin

Cytokinesis: Cell is divided in half

To review:

Put the following pictures in order!



Take myMCPS exit card on myMCPS Classroom DNA, Genes, Chromosome Exit Card

A screenshot of a classroom dashboard for the unit '02 Cell Cycle and DNA'. The dashboard shows two items: 'myMCPS DNA, Genes, Chromosomes Mini Quiz' (Multiple Due Dates | 5 pts) and 'Mrs. McGaffin's weebly page'. A red arrow points to the 'myMCPS DNA, Genes, Chromosomes Mini Quiz' item.

Then go to weebly and read the CK-12 Article

A screenshot of a biology classroom page titled 'Biology with Mrs. McGaffin'. The page features a unit overview for '***Unit 5: Cell Cycle, Gene Expression, DNA, and Protein Synthesis' (March 15- May 3, 2019) with four diagrams of cell cycle stages: Prophase, Metaphase, Anaphase, and Telophase + Cytokinesis. Below the overview is a 'Daily Plans and Classroom Notes, worksheets and Resources' section for March 15 and March 18. The March 18 homework includes 'CK-12: Cell Cycle Reading' and 'Mitosis Animation'. To the right is an 'Additional Resources' section with 'CK-12: Mitosis Reading' and a 'Vocab' section defining Gene, DNA, and Chromosome. Black arrows point from the 'CK-12: Cell Cycle Reading' and 'Mitosis Animation' links in the homework section to the 'CK-12: Mitosis Reading' link in the additional resources section.

Go to weebly: Cell Cycle unit...Click on links March 18th

- **Read the CK-12 Cell Cycle Reading**
- **Look at the Mitosis Animation**

Be prepared to explain what happens in the cell cycle and the difference between interphase and mitosis.

Cell Cycle Homework

Review

1. Identify the phases of the eukaryotic cell cycle.
2. What happens during interphase?
3. Define **cancer**.
4. Cells go through a series of events that include growth, DNA synthesis, and cell division.
Why are these events best represented by a cycle diagram?
5. Explain how the cell cycle is regulated.
6. Why is DNA replication essential to the cell cycle?

**Questions on the back of
the packet**

