Internet Assignment: The Cell Cycle

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Class: \_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Mitosis

Read the introduction 1st, than watch the narrated animation

<http://www.sumanasinc.com/webcontent/animations/content/mitosis.html>

1. If the DNA from 1 human cell were removed and uncoiled, how long would it be?\_\_\_\_\_\_\_\_\_
2. What divides in mitosis\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. What events happen during interphase
4. What is the role of a centrosome?
5. When do chromosomes become visible?
6. What is DNA packaged as before becoming visible chromosomes?
7. Describe the events that happen during prometaphase?
8. Draw what a metaphase cell looks like, labeling all the important parts
9. How would you describe the chromosome alignment in this stage?
10. What moves toward poles during anaphase
11. What is the nucleolus and when does the nucleolus begin to reappear?

# The Cell Cycle

<http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__how_the_cell_cycle_works.html>

1. What is the cell cycle, and what types of cells participate in it?
2. List and briefly describe the 3 stages of the cell cycle?
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Throughout interphase what 2 things in the cell engaged in
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. What is metabolism
5. Each identical copy of a single chromosome is called a\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. When are organelles divided\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
7. What is the result of mitosis

# Mitosis & Cytokinesis

<http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__mitosis_and_cytokinesis.html>

1. What kind of proteins make the mitotic spindle?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Explain the difference between kinetochore microtubules and non-kinetochore microtubules
3. At what stage are individual chromatids considered chromosomes again?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. How does cytokinesis occur in animal cells? Plant cells?
   1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
   2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# Checkpoints

<http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__control_of_the_cell_cycle.html>

1. What does the G2 checkpoint decide
2. Why is the S phase so important
3. Why is the G2 checkpoint so important for heredity (be thorough in your explanation expanding on the animation)
4. When is the final checkpoint?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
5. Why is cytokinesis not a distinctly separate phase?