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| **Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** | **Mr. Amidon** | **Science 8** |

**Mitosis & Meiosis**

*Complete the following questions. Use your notes, the attached diagrams and the web sites below as references.*

Web Sites: (Can be accessed through “Mitosis-Meiosis Webquest” on Mr. Amidon’s Homepage.

[Cell Division: Binary Fission and Mitosis](javascript:openLink('http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookmito.html','external',%20'',%20'true');%20void%200;)  
[Cell Division: Meiosis and Sexual Reproduction](javascript:openLink('http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookmeiosis.html','external',%20'',%20'true');%20void%200;)  
[Interactive Mitosis Tutorial](javascript:openLink('http://www.sci.sdsu.edu/multimedia/mitosis/','external',%20'',%20'true');%20void%200;) (Requires the Shockwave plug-in, available from the site)  
[Mitosis](javascript:openLink('http://www.accessexcellence.org/RC/VL/GG/mitosis2.php','external',%20'',%20'true');%20void%200;) (Illustration)  
[Meiosis](javascript:openLink('http://www.accessexcellence.org/RC/VL/GG/meiosis.php','external',%20'',%20'true');%20void%200;) (Illustration)  
[Comparison of Meiosis and Mitosis](javascript:openLink('http://www.accessexcellence.org/RC/VL/GG/comparison.php','external',%20'',%20'true');%20void%200;) (Illustration)

1. What is meant by the phrase "cell cycle"?
2. What are the phases that make up the cell cycle?
3. How does cell division occur in prokaryotes?
4. What events must occur during cell division in both prokaryotic and eukaryotic cells?
5. How does prokaryotic cell division differ from eukaryotic cell division?
6. What is cytokinesis?
7. What is meant by the terms diploid and haploid?
8. What is the purpose of mitosis?

1. Identify and describe each phase of mitosis.
2. Draw diagrams that depict each phase of mitosis.
3. How does cell division in animals differ from cell division in plant cells?
4. What is the purpose of meiosis?
5. Identify and describe each phase of meiosis.
6. Draw diagrams that depict each phase of meiosis.
7. What is gametogenesis?
8. How many sperm cells are produced in males when one diploid cell enters gametogenesis?
9. How many egg cells (ova) are produced in females when one diploid cell enters gametogenesis?
10. Describe ways in which mitosis and meiosis are similar.
11. Describe the ways in which mitosis and meiosis are different.

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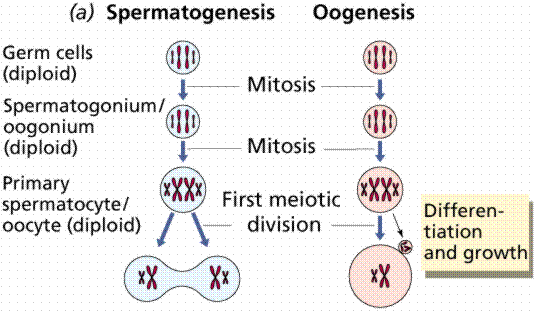
DIAGRAMS

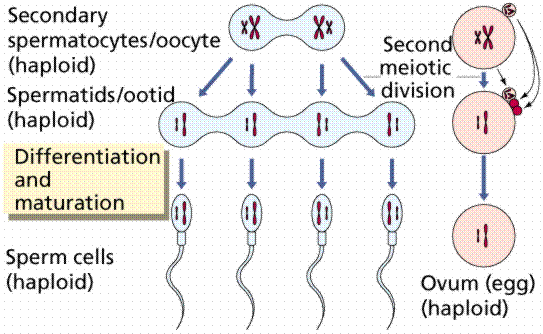
<http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookmito.html>

<http://www.emc.maricopa.edu/faculty/farabee/BIOBK/BioBookmeiosis.html>

Images from from Purves et al., Life: The Science of Biology, 4th Edition, by Sinauer Associates ([www.sinauer.com](http://www.sinauer.com)) and WH Freeman ([www.whfreeman.com](http://www.whfreeman.com)), used with permission.

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| http://www.emc.maricopa.edu/faculty/farabee/BIOBK/cellcycle.gif  The cell cycle. | Structure of a eukaryotic chromosome.  http://www.emc.maricopa.edu/faculty/farabee/BIOBK/chromosome1.gif |
| http://www.emc.maricopa.edu/faculty/farabee/BIOBK/spindle.gif Structure and main features of a spindle apparatus. | Crossing-over between homologous chromosomes produces chromosomes with new associations of genes and alleles. http://www.emc.maricopa.edu/faculty/farabee/BIOBK/Crossover.gif |





Gametogenesis. Images from Purves et al., Life: The Science of Biology, 4th Edition, by Sinauer Associates ([www.sinauer.com](http://www.sinauer.com)) and WH Freeman ([www.whfreeman.com](http://www.whfreeman.com)), used with permission.

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| http://www.accessexcellence.org/RC/VL/GG/images/MITOSIS2.gif | http://www.accessexcellence.org/RC/VL/GG/images/meiosis.gif |
| http://www.accessexcellence.org/RC/VL/GG/images/comparison.gif | |
| <http://www.accessexcellence.org/RC/VL/GG/mitosis2.php>, <http://www.accessexcellence.org/RC/VL/GG/meiosis.php>, <http://www.accessexcellence.org/RC/VL/GG/comparison.php> | |