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| **Guided Notes: The Cell Cycle and Mitosis** | |
| http://jasminemjblogs.files.wordpress.com/2011/09/a-good-idea1.png**BIG IDEA: What is Mitosis?**    http://home.comcast.net/~clupold96/images/notes/chromosomes/fertilization.gif |  |
| **When does Mitosis begin?** | * i.e. 1 cell becomes 2 cells, 2 cells become 4 cells…become TRILLIONS!!! |
| **Why do cells make more cells?**  **Three reasons why cells reproduce by asexual reproduction…** |  |
| **Important Terms**   1. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:**  body cells, produced through Mitosis, ours contain 46 chromosomes (23 pairs) 2. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:**  each member of a chromosome pair 3. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** (2N) two sets of chromosomes (usually one from each parent), total of 46 chromosomes in people, ex. Somatic cells & Zygotes 4. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:** (n) half of a complete set of chromosomes, total of 23 chromosomes in people, ex. Gametes (egg and sperm) | **Steps of the Cell Cycle**   1. [http://www.ivy-rose.co.uk/Topics/Cell_Structures/Mitosis_cIvyRose.jpg](http://www.cellsalive.com/mitosis.htm) |
| http://www.edupic.net/Images/Mitosis/interphase(G2).png**INTERPHASE** | * Occurs before Mitosis begins * Chromosomes are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (# DOUBLES) * Chromosomes appear as threadlike coils (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_) at the start, but each chromosome and its copy (\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_)condense to sister chromatids by the end of this phase |
| **What are the 3 stages of Interphase?**   1. **Growth Stage 1** 2. **Synthesis** 3. **Growth Stage 2** | 1. **G1:** 2. **S:** 3. **G2:** |
| http://www.edupic.net/Images/Mitosis/prophase.png**PROPHASE (1st Stage of Mitosis)** | * Mitosis begins (cell begins to divide) * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (or poles) appear and begin to move to opposite ends of the cell * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ disappears * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ form between the poles |
| **METAPHASE (2nd Stage of Mitosis)**  http://www.edupic.net/Images/Mitosis/metaphase.png | * Chromatids(pairs of chromosomes) attach to the spindle fibers at the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ * \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ move to the equator of the spindle |
| **ANAPHASE (3rd Stage of Mitosis)**  [http://ts2.mm.bing.net/th?id=H.4595581874409033&pid=15.1](http://images.search.yahoo.com/images/view;_ylt=A0PDoS2xGaFSJTkAdgKJzbkF;_ylu=X3oDMTIyYWRlM2dwBHNlYwNzcgRzbGsDaW1nBG9pZAMzMDI4NGUzOGI2ZmM1Mzc4MGMwYmRlY2Q5OTE3NjdjNgRncG9zAzEEaXQDYmluZw--?back=http://images.search.yahoo.com/search/images?p%3Danaphase%26n%3D60%26ei%3Dutf-8%26tab%3Dorganic%26ri%3D1&w=1131&h=746&imgurl=www.edupic.net/Images/Mitosis/anaphase.png&rurl=http://www.edupic.net/cells.htm&size=539.8KB&name=...+chromosomes+%3cb%3eanaphase%3c/b%3e,+mitosis,+eukaryotic+cell+division,+chromosomes&p=anaphase&oid=30284e38b6fc53780c0bdecd991767c6&fr2=&fr=&tt=...+chromosomes+%3cb%3eanaphase%3c/b%3e,+mitosis,+eukaryotic+cell+division,+chromosomes&b=0&ni=96&no=1&ts=&tab=organic&sigr=10v3rvusb&sigb=12mom99pu&sigi=11aar2uee&.crumb=npSFJGppQsU&) [http://ts2.mm.bing.net/th?id=H.4595581874409033&pid=15.1](http://images.search.yahoo.com/images/view;_ylt=A0PDoS2xGaFSJTkAdgKJzbkF;_ylu=X3oDMTIyYWRlM2dwBHNlYwNzcgRzbGsDaW1nBG9pZAMzMDI4NGUzOGI2ZmM1Mzc4MGMwYmRlY2Q5OTE3NjdjNgRncG9zAzEEaXQDYmluZw--?back=http://images.search.yahoo.com/search/images?p%3Danaphase%26n%3D60%26ei%3Dutf-8%26tab%3Dorganic%26ri%3D1&w=1131&h=746&imgurl=www.edupic.net/Images/Mitosis/anaphase.png&rurl=http://www.edupic.net/cells.htm&size=539.8KB&name=...+chromosomes+%3cb%3eanaphase%3c/b%3e,+mitosis,+eukaryotic+cell+division,+chromosomes&p=anaphase&oid=30284e38b6fc53780c0bdecd991767c6&fr2=&fr=&tt=...+chromosomes+%3cb%3eanaphase%3c/b%3e,+mitosis,+eukaryotic+cell+division,+chromosomes&b=0&ni=96&no=1&ts=&tab=organic&sigr=10v3rvusb&sigb=12mom99pu&sigi=11aar2uee&.crumb=npSFJGppQsU&)  [http://ts2.mm.bing.net/th?id=H.4595581874409033&pid=15.1](http://images.search.yahoo.com/images/view;_ylt=A0PDoS2xGaFSJTkAdgKJzbkF;_ylu=X3oDMTIyYWRlM2dwBHNlYwNzcgRzbGsDaW1nBG9pZAMzMDI4NGUzOGI2ZmM1Mzc4MGMwYmRlY2Q5OTE3NjdjNgRncG9zAzEEaXQDYmluZw--?back=http://images.search.yahoo.com/search/images?p%3Danaphase%26n%3D60%26ei%3Dutf-8%26tab%3Dorganic%26ri%3D1&w=1131&h=746&imgurl=www.edupic.net/Images/Mitosis/anaphase.png&rurl=http://www.edupic.net/cells.htm&size=539.8KB&name=...+chromosomes+%3cb%3eanaphase%3c/b%3e,+mitosis,+eukaryotic+cell+division,+chromosomes&p=anaphase&oid=30284e38b6fc53780c0bdecd991767c6&fr2=&fr=&tt=...+chromosomes+%3cb%3eanaphase%3c/b%3e,+mitosis,+eukaryotic+cell+division,+chromosomes&b=0&ni=96&no=1&ts=&tab=organic&sigr=10v3rvusb&sigb=12mom99pu&sigi=11aar2uee&.crumb=npSFJGppQsU&) | * Chromatids (pairs of chromosomes)… |
| **TELOPHASE (4th & Final Stage of Mitosis)**  [http://ts1.mm.bing.net/th?id=H.4595581874408988&pid=15.1](http://images.search.yahoo.com/images/view;_ylt=A0PDoV4aGqFS6GAADJaJzbkF;_ylu=X3oDMTIyaTI1NjlnBHNlYwNzcgRzbGsDaW1nBG9pZANjNDZhZTg2MTU3ZjQ4YmY1MWEwYzgyNzgwY2U1ZDVkYQRncG9zAzEEaXQDYmluZw--?back=http://images.search.yahoo.com/search/images?p%3Dtelophase%26n%3D60%26ei%3Dutf-8%26y%3DSearch%26tab%3Dorganic%26ri%3D1&w=1228&h=730&imgurl=www.edupic.net/Images/Mitosis/telophase.png&rurl=http://www.edupic.net/cells.htm&size=686.6KB&name=%3cb%3etelophase%3c/b%3e,+mitosis,+eukaryotic+cell+division,+chromosomes+cytokinesis+...&p=telophase&oid=c46ae86157f48bf51a0c82780ce5d5da&fr2=&fr=&tt=%3cb%3etelophase%3c/b%3e,+mitosis,+eukaryotic+cell+division,+chromosomes+cytokinesis+...&b=0&ni=96&no=1&ts=&tab=organic&sigr=10v3rvusb&sigb=1304s8cjk&sigi=11bp5rq90&.crumb=npSFJGppQsU&)  [http://ts1.mm.bing.net/th?id=H.4595581874408988&pid=15.1](http://images.search.yahoo.com/images/view;_ylt=A0PDoV4aGqFS6GAADJaJzbkF;_ylu=X3oDMTIyaTI1NjlnBHNlYwNzcgRzbGsDaW1nBG9pZANjNDZhZTg2MTU3ZjQ4YmY1MWEwYzgyNzgwY2U1ZDVkYQRncG9zAzEEaXQDYmluZw--?back=http://images.search.yahoo.com/search/images?p%3Dtelophase%26n%3D60%26ei%3Dutf-8%26y%3DSearch%26tab%3Dorganic%26ri%3D1&w=1228&h=730&imgurl=www.edupic.net/Images/Mitosis/telophase.png&rurl=http://www.edupic.net/cells.htm&size=686.6KB&name=%3cb%3etelophase%3c/b%3e,+mitosis,+eukaryotic+cell+division,+chromosomes+cytokinesis+...&p=telophase&oid=c46ae86157f48bf51a0c82780ce5d5da&fr2=&fr=&tt=%3cb%3etelophase%3c/b%3e,+mitosis,+eukaryotic+cell+division,+chromosomes+cytokinesis+...&b=0&ni=96&no=1&ts=&tab=organic&sigr=10v3rvusb&sigb=1304s8cjk&sigi=11bp5rq90&.crumb=npSFJGppQsU&) | * 2 new identical nuclei form (nuclear envelopes reform) * Mitosis ends! |
| **CYTOKINESIS (Occurs after Mitosis)**  http://www.edupic.net/Images/Mitosis/cytokinesis_3D.png | * Cell membrane moves inward to create two \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells- each with its own \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ with identical chromosomes |
| **REMEMBER…**  **I:**  **P:**  **M:**  **A:**  **T:**  **C:** |  |

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