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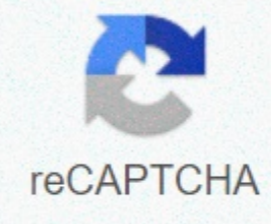
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Cells alive cell cycle worksheet answer key

1 Cells alive – Cell cycle 2 3 Gap 1 phase (G1) – Cell growth, produce RNA, synthesize protein 4 Gap 0 Phase (G0) – cell stops splitting (temporary or permanent) 5 G1 control site – The cell is large enough and the environment stable? 6 Continue G1 phase – If the cell passes g1 checkpoint, the cell continues cycle 7 synthesis phase (S phase) – Period of DNA replication, switching from 2N to 4N in preparation for mitosis 8 Gap 2 phase (G2 phase) – After DNA replication, the cell continues to grow and produces proteins 9 Gap 2 (G2) Checkpoint – DNA is duplicated, cell large enough and stable environment? 10 Begins mitosis – cell growth and protein production stops; cell begins division process 11 Metaphase Checkpoint – Is the cell ready to complete division? 12 Continue mitosis – Cell coatings are divided and two new child cells enter the interphase; old cells no longer exist During the development from stem to fully differentiated, cells in the body alternately divide (mitosis) and seem to be resting (interphase). This sequence of activities exposed by cells is called a cell cycle. Follow the events throughout the cell cycle with the following animation. Interphasis: The interphase, which looks to the eye as a phase of rest between cell divisions, is actually a period of various activities. These interphase activities are necessary for the implementation of the next mitosis possible. Interphased usually lasts at least 12 to 24 hours in mammalian tissue. During this period, the cell continuously synthesizes RNA, produces protein and grows in size. By studying molecular events in cells, scientists have found that the interphase can be divided into 4 steps: Gap 0 (G0), Gap 1 (G1), S (synthesis) phase, Gap 2 (G2). Gap 0 (G0): There are times when a cell will leave the loop and give up separation. This may be a temporary rest period or more permanent. An example of the latter is a cell that has reached the final stage of development and will no longer divide (for example, a neuron). Gap 1 (G1): Cells increase in size in Gap 1, produce RNA and synthesize protein. An important control mechanism of the cell cycle activated during this period (G1 checkpoint) ensures that everything is ready for DNA synthesis. (Click the animation of the checkpoints above.) S Phase: To obtain two similar child cells, the complete DNA instructions in the cell must be duplicated. DNA replication occurs during this S (synthesis) phase. Gap 2 (G2): During the gap between DNA synthesis and mitosis, the cell will continue to grow and produce new proteins. At the end of this gap is another checkpoint (G2 checkpoint) to determine whether the cell can now continue to enter M (mitosis) and split. Mitosis or M Phase: Cell growth and at this stage in the cell cycle. All the energy of the cell is focused on the complex arrangement of two similar daughters. Daughters. Mitosis is much shorter than the interphase, which lasts perhaps only one to two hours. As in both G1 and G2, there is a checkpoint in the middle of mitosis (Metaphase Checkpoint), which ensures that the cell is ready to complete the cell division. The actual stages of mitosis can be seen in animal cell mitosis. Cancer cells reproduce relatively quickly in culture. In cancer cell CAM comparing the length of time these cells spend in the interphase with that of mitosis to occur. Partnership of science organizations for life PreK, Kindergarten, 1st, 2nd, 3th, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, Higher Education, Adult Education, Home, Staff, 2nd, Kindergarten, 1st, 2nd, 3th, 4th, 5th, 6th, 7th, 8th, 9th , 10th, 11th, 12th, 9th, 10th, 11th, 12th, Higher Education, Adult Education , Home, 41st, 2nd, 3th, 4th, 5th, 6th, 7th, 8th, 9th, 10th, 11th, 12th, 12th, 12th, Home