Name _____ Period _____

Science Starters – Cell Nucleus

For extended response questions, answers must be written in full sentences and the question must be restated. For multiple choice questions, first choose the right answer and then using complete sentences explain why you chose the answer you did.

Day 1

A nucleus is the control center of the cell. It helps control cell reproduction and movement. Which of the following statements is the most true about a cell nucleus?

A. All living cells have a nucleus which contains genetic material.
B. All living cells have a nucleus, but not every nucleus has genetic material.
C. Not all cells have a nucleus, but all cells do contain genetic material.
D. Some cells do not have a nucleus or contain genetic material.

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Day 2

A nucleus is one of many organelles that can be found in the cytoplasm of a cell. Which of the following comparisons between a cell and a nucleus is the most accurate?

A. Both a cell and a nucleus have membranes.
B. Both the cell and the nucleus have cytoplasm inside them.
C. Both the cell and the nuclear envelope dissolve during mitosis (cell reproduction).
D. Both a cell and a nucleus are visible with a naked eye.

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Day 3

Many people have a misconception that a nucleus must be in the center of the cell. This is not true. In fact the nucleus has the ability to move to different parts of the cell. However, the nucleus is rarely near the edge of the cell (cell membrane). Using what you know about a cell and a cell nucleus, explain why the nucleus is rarely found near the cell membrane.

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Day 4

The nucleus of a cell contains genetic material called chromosomes. The chromosomes are made up of DNA (deoxyribonucleic acid). Which of the following statements best describes the role of the DNA that can be found in the cell nucleus?

A. The DNA in a cell contains only enough information to build that **one type of cell**.
B. The DNA in a cell contains only enough information to build cells in **one type of tissue**.
C. The DNA in a cell contains only enough information to build cells in **one organ system**.
D. The DNA in a cell contains all the information to build the **entire organism**.

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Day 5

During mitosis the nuclear envelope most often dissolves during prophase and the chromosomes can move throughout the cell. Using what you know about the nucleus, chromosomes and cell division, explain why it is necessary for the nuclear envelope to dissolve during mitosis.

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