**History of the Cell Theory: Timeline Activity**

**Introduction**:

The development of *The Cell Theory* is one of the most important discoveries in the life sciences. By understanding the role cells play in living organisms, biologists are better able to understand how organisms grow, develop, metabolize, respond to stimuli, reproduce, and evolve. In this activity, you will examine evidence that has led to the development of *The Cell Theory* to appreciate the scientific process and to begin to understand the importance of cells in living organisms. The final product will be a chronology that includes corresponding dates, scientific evidence, event titles and illustrations to accurately demonstrate the development of this theory.

**Directions:**

1. Review the evidence for developing the cell theory. Place the pieces of evidence in chronological order.
2. Sort the dates needed for the timeline in chronological order. Place the properly sequenced pieces of evidence with their corresponding dates.
3. For each date and piece of evidence, identify and place the appropriate title that best describes the evidence.
4. Draw an illustration to depict the information learned for each piece of evidence. Place the drawing with the corresponding event.

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Draw an illustration to depict the information learned for each piece of evidence. Place the drawing with the corresponding event.

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| **Date** |
| 1665 |
| 1670 |
| 1683 |
| 1833 |
| 1838 |
| 1839 |
| 1840 |
| 1845 |
| 1855 |

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| Robert Hooke, an English scientist, discovered a honeycomb-like structure in a cork slice using a primitive compound microscope. He only saw cell walls as this was dead tissue. He coined the term "cell" for these individual compartments he saw. |
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| Anton van Leeuwenhoek, a Dutch biologist, looks at pond water with a microscope he made lenses for. |
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| Anton van Leeuwenhoek made several more discoveries on a microscopic level, eventually publishing a letter to the Royal Society in which he included detailed drawings of what he saw. Among these was the first protozoa and bacteria discovered. |
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| Robert Brown, an English botanist, discovered the nucleus in plant cells. |
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| Matthias Jakob Schleiden, a German botanist, proposes that all plant tissues are composed of cells, and that cells are the basic building blocks of all plants. This statement was the first generalized statement about cells. |
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| Theodor Schwann, a German botanist reached the conclusion that not only plants, but animal tissue as well is composed of cells. This ended debates that plants and animals were fundamentally different in structure. He also pulled together and organized previous statement on cells into one theory, which states: 1 - Cells are organisms and all organisms consist of one or more cells 2 - The cell is the basic unit of structure for all organisms |
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| Albrecht von Roelliker discovers that sperm and eggs are also cells. |
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| Carl Heinrich Braun reworks the cell theory, calling cells the basic unit of life. |
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| Rudolf Virchow, a German physiologist/physician/pathologist added the 3rd part to the cell theory. The original is Greek, and states Omnis cellula e cellula. This translates as all cells develop only from existing cells. Virchow was also the first to propose that diseased cells come from healthy cells. |

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| **Cell first observed** |
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| **First living cells seen** |
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| **Miniature “animals”** |
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| **Center of the cell is seen** |
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| **Cells are the building blocks of plants** |
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| **All organisms are made of 1 or more cells** |
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| **Cells are the basic unit of structure** |
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| **Reproductive cells discovered** |
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| **Cells are the basic unit of life** |
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| **All cells come from already existing cells** |