

Cell Theory and the Nature of Science

Name: _____ Period: _____

Materials: book, butcher paper, markers

Purpose: To understand what a theory is, how the cell theory developed and how this development follows the pattern of scientific development.

Background: Science distinguishes itself from other ways of knowing and from other bodies of knowledge through the use of empirical standards, logical arguments, and skepticism, as science strives for explanations of the world. Scientists develop theories to explain a large range of observations. Theories are tested by many independent scientists and allow a scientist to make accurate predictions about new situations. The Cell theory has been developed over time and new knowledge has often been based on technological breakthroughs.

What are three main ideas stated in the Cell theory?

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Procedure:

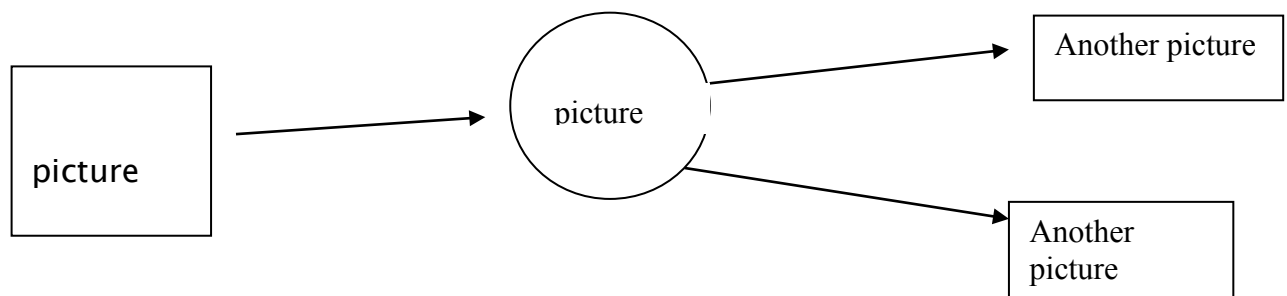
1. Read pages 3-15 in your book, describing what Science is.
2. Three examples of main ideas have been given for you. Summarize **in your own words** the 7 more main ideas you found in these pages.

1. Science uses experimentation and observation to understand the natural world
2. Science is reproducible, because nature usually behaves in a predictable manner
3. As technology advances scientists are able to obtain new, and more accurate evidence
4.
5.
6.
7.
8.
9.
10.

3. Now read pages 169-171 in your book, which explains the cell theory.
4. Using the timeline and information you just read, correlate something related to the cell theory with the main ideas you found in the previous reading discussing the nature of science.

Principle of Science	Cell Theory Application
Science uses experimentation and observation to understand the natural world	Schlieden observes plant cells under a microscope and infers living things are made of cells.
Science is reproducible, because nature usually behaves in a predictable manner	Schlieden and Shwann both infer that living things are composed of cells, they use the same method: microscope
As technology advances scientists are able to obtain new, and more accurate evidence	

5. Now in partners create a poster, which **visually** represents the information above. Try not to use any words. Make sure that your poster is neat, creative, colorful and accurate.



Conclusions: Please explain, in complete sentences, 4 major concepts that you learned.