

<b>Cornell Notes</b>		<b>Name:</b> _____
Topic: <u>Cells and Life</u>		<b>Date:</b> _____
		<b>Period:</b> _____
<p><b>Essential Question: How did scientists' understanding of cells develop? What basic substances make up a cell?</b></p>		
<b>Questions/Main Ideas:</b>	<b>Notes:</b>	
	1. Cells are so small, early scientists had no tool to study them.	
	2. An English scientist names Robert Hooke built a microscope. He called the structures cells, from the Latin word <i>cellula</i> which means "small rooms."	
	3. The newer microscopes enabled scientists to see different structures inside cells. Matthias Schleiden-looked at plant cells, Theodor Schwann-looked at animal cells. Schleiden and Schwann realized that plant and animal cells have similar features.	
	4. Rudolf Virchow said that all cells come form preexisting cells, or cells that already exist.	
	5. Macromolecules form by joining many small molecules together.	
	6. The main ingredient in any cell is water. It makes up more than 70 percent of a cell's volume and is essential for life. Water also surrounds cells.	
	7. The structure of a water molecule makes it ideal for dissolving many other substances. Substances must be in a liquid to move into and out of cells. The positive and negative ends of a water molecule attract the positive and negative parts of another substance, similar to the way magnets are attracted to each other.	
	8. There are four types of macromolecules in cells: nucleic acids, proteins, lipids, and carbohydrates. Each type of macromolecule has unique functions in a cell.	
	9. DNA-deoxyribonucleic acid, RNA-ribonucleic acid are nucleic acids. Nucleic acids are macromolecules that form when long chains of molecules called	

	nucleotides join together. The order of nucleotides in DNA and RNA is important.
	Four Bases
	adenine, guanine, cytosine, thymine are in a strand of DNA
	10. Nucleic acids are important in cells because they contain genetic information. This information can pass from parents to offspring.
	DNA is used to make RNA. RNA is used to make proteins.
	11. Proteins are long chains of amino acid molecules.
	12. Cells contain hundreds of proteins. Each protein has a unique function.
	13. A lipid is a large macromolecule that does not dissolve in water. It is a major part of cell membranes.
	14. One sugar molecule, two sugar molecules, or a long chain of sugar molecules make up carbohydrates. Carbohydrates store energy, provide structural support, and are needed for communication between cells.
	Cellulose is a carbohydrate in the cell walls in plants that provides structural support.
<p><b>Summary: * The invention of the microscope led to discoveries about cells. In time, scientists used these discoveries to develop the cell theory, which explains how cells and living things are related.</b></p>	
<ul style="list-style-type: none"> <li>• <b>Cells are composed mainly of water, proteins, nucleic acids, lipids, and carbohydrates.</b></li> </ul>	