

**Development of the Periodic Table**

<b>Hennig Brand (c.1630-1692)</b>	<ul style="list-style-type: none"> <li>• <b>1<sup>st</sup> discovery of an element</b> (phosphorus) by distilling urine in 1669</li> <li>• Brand was an alchemist in search of philosopher's stone, which reportedly could turn base metals into gold.</li> </ul>
<b>Johann Dobereiner (1780-1849)</b>	<ul style="list-style-type: none"> <li>• In 1829 he developed the <b>Law of Triads</b> where he stated that in a group of three elements with similar properties, the weight of the middle element was the average of the mass of the lightest and heaviest elements.</li> <li>• Ca, Sr &amp; Ba <math>(40, 88, 137) = (40 + 137) \div 2 = 88</math></li> <li>• Li, Na &amp; K <math>(7, 23, 39) = (7 + 39) \div 2 = 23</math></li> <li>• Cl, Br &amp; I <math>(35, 80, 127) = (35 + 127) \div 2 = 81</math></li> </ul>
<b>Alexander E. Beguyer de Chancourtois (1820-1886)</b>	<ul style="list-style-type: none"> <li>• In 1862 he <b>published the first periodic table</b> which was a list of all known elements wrapped around a cylinder so that elements with similar properties lined up in a vertical column.</li> </ul>
<b>John Newlands (1837-1898)</b>	<ul style="list-style-type: none"> <li>• After arranging 56 known elements by increasing atomic mass he noted that the physical &amp; chemical properties of the elements began to repeat every eight elements.</li> <li>• He was the first to formulate the concept of periodicity in the chemical elements.</li> <li>• He compared the chemical periodicity to the notes on a musical scale and called his theory the <b>Law of Octaves</b>.</li> </ul>
<b>Dimitri Mendeleev (1834-1907)</b>	<ul style="list-style-type: none"> <li>• He arranged the elements by increasing atomic weight, grouping elements with similar properties. Mendeleev changed atomic weights for some elements.</li> <li>• Published his first periodic table in 1869 which had 17 columns &amp; 4 periods.</li> <li>• Mendeleev's periodic table left spaces for yet undiscovered elements. He predicted the properties of 10 elements, 7 were actually discovered.</li> <li>• Known as the <b>Father of the Periodic Table</b>.</li> </ul>
<b>Lothar Meyer (1830-1895)</b>	<ul style="list-style-type: none"> <li>• He produced similar results to Mendeleev, while working separately, but he published his table after Mendeleev.</li> </ul>
<b>Henry Moseley (1887-1915)</b>	<ul style="list-style-type: none"> <li>• Student of Ernest Rutherford (discoverer of the proton).</li> <li>• Moseley <b>arranged the elements of the periodic table by increasing atomic number</b> (instead of increasing atomic weight).</li> <li>• After being killed at age 28 during World War I, Britain adopted the policy of exempting scientists from fighting in wars.</li> </ul>
<b>Glenn T. Seaborg (1912 – 1999)</b>	<ul style="list-style-type: none"> <li>• <b>Involved in the discovery (creation) of elements 94-102 and 106.</b></li> <li>• He reconfigured the periodic table by placing <b>the lanthanides &amp;</b></li> </ul>

	actinides at the bottom of the table.
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**Homework: For each of the following statements, write the scientist's name that best applies.**

1. **John Newlands** He wrote the Law of Octaves.
2. **A.E. Beguyer de Chancourtois** He wrote the first Periodic Table.
3. **Dimitri Mendeleev** He is the Father of the Periodic Table.
4. **Johann Dobereiner** He wrote the Law of Triads.
5. **Henry Moseley** He was the first to arrange the elements by increasing atomic number.
6. **Glenn Seaborg** He is responsible for creating elements 94-102 and 106.
7. **Lothar Meyer** He made a table similar to Mendeleev, but published it a year later.
8. **John Newlands** He was the first to show the concept of periodicity between the elements.
9. **Hennig Brand** He made the first discovery of an element.
10. **Glenn Seaborg** Element 106 is named after this scientist.
11. **Dimitri Mendeleev** Element 101 is named after this man.
12. **Johann Dobereiner** He was first to note similarities between groups of three elements and their atomic weights.
13. **John Newlands** He noticed that the physical & chemical properties of the elements began to repeat every eight elements in his periodic table.
14. **Henry Moseley** He was killed at 28 years old during World War I.
15. **1862** In what year was the first periodic table written?
16. **Dimitri Mendeleev** On his periodic table, he left spaces for yet to be discovered elements.
17. **Glenn Seaborg** He reconfigured the periodic table by placing the lanthanides and actinides at the bottom of the periodic table.