

KEY 5.1 Organizing the Elements
Honors Integrated Science
Student **Notes**

Name: _____ Date: _____

5.1 Organizing the Elements	
Key Ideas	Notes
Why is it necessary to organize elements ?	An organized table of elements is one of the most useful tools in chemistry
How did Mendeleev organize the elements in his periodic table?	<i>Mendeleev's Proposal</i> Mendeleev arranged the elements into rows in order of increasing mass so that elements with similar properties were in the same column. Mendeleev developed an approach for organizing the elements while playing solitaire.
	<i>Mendeleev's Periodic Table</i> Mendeleev made cards with the properties of each element on it. He lined the card up in order of increasing mass, and a pattern emerged.
	<i>Periodic table</i> He noticed that the columns were organized by properties. Within a column, the masses increased from top to bottom. A periodic table is an arrangement of elements in columns, based on a set of properties that repeat from row to row.
	<i>Mendeleev's Prediction</i> At the time Mendeleev made his table, many elements had not yet been discovered. He left gaps in his table where he predicted the properties of undiscovered elements. He was able to explain how the properties of an element were related to its location in the table. Some scientists accepted his table, some did not.
What evidence helped verify the usefulness of Mendeleev's table?	The close match between Mendeleev's predictions and the actual properties of new elements showed how useful his periodic table could be.
	<i>Mendeleev's Periodic Table</i> He predicted the properties of "eka-aluminum" which is an undiscovered element located below Aluminum.

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| | <ul style="list-style-type: none">• In 1875 a french chemist discovered gallium which has the same properties of “eka-aluminum”. Scientists use the periodic table to explain the chemical behavior of different groups of elements |
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