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about what you are
reading in this space.

Science Shorts -6

Mendeleev Figures It Out

Dmitri Ivanovich Mendeleev was not a great student in high school, which may have disappointed his father, who was a high school principal. But Mendeleev's mother believed in him and managed to get him enrolled in college after his father died. Mendeleev graduated at the top of his 1855 class.

Mendeleev became fascinated with the chemistry of matter. He made a discovery in 1869 that organized all the known elements in a logical sequence. At the same time he was able to predict several elements that no one had discovered yet!

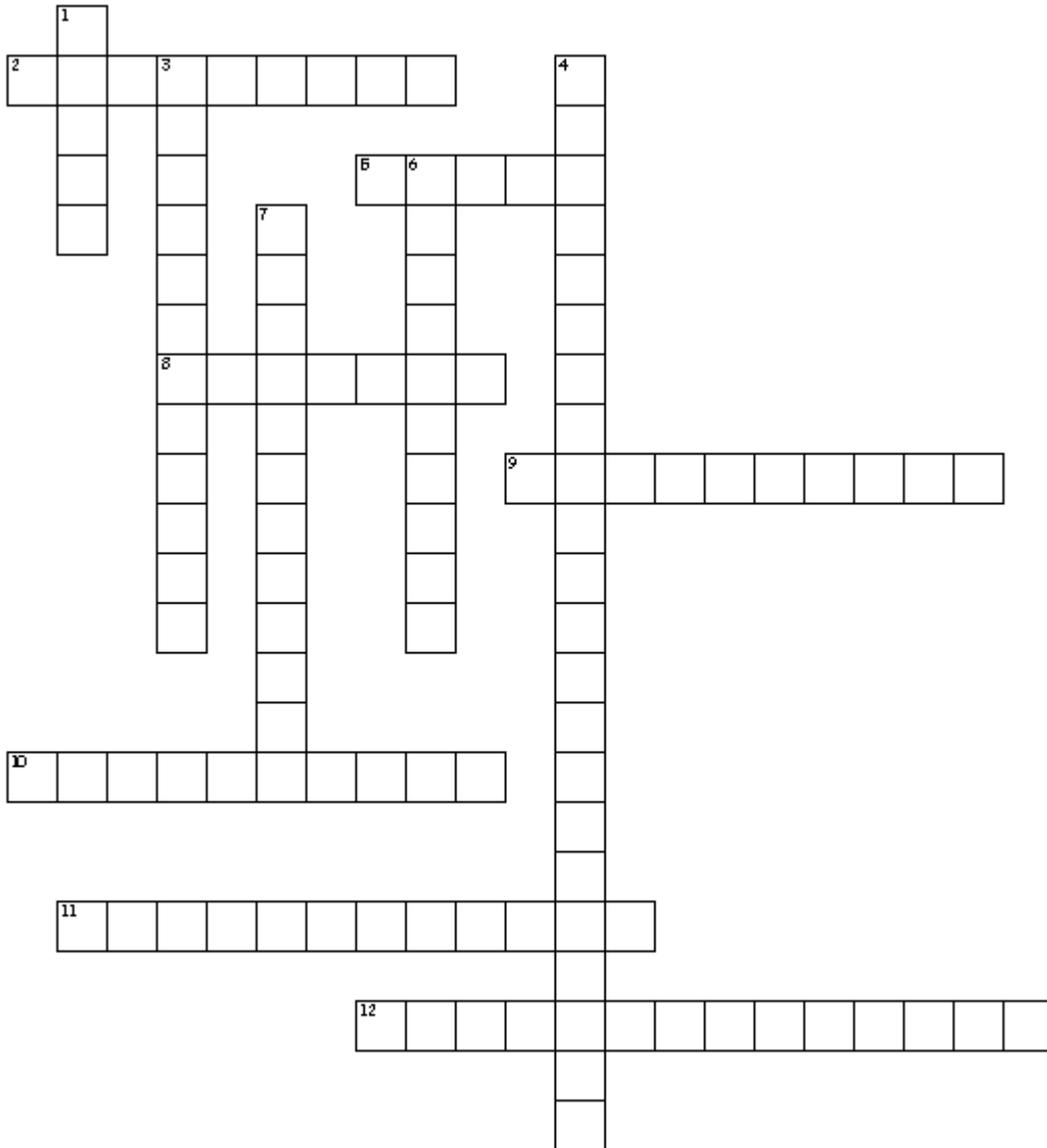
Mendeleev was a card player. He got an idea to list all the known elements (there were 63) and some of their properties on a deck of cards. The first thing he listed about each element was their atomic mass. He next listed whether they were solids, liquids or gases at room temperature. Then he listed their color and melting and boiling points.

Then he began to put them in order by their atomic mass. He discovered that there were repeating patterns in their physical and chemical characteristics. He then began to put them in rows and columns using all of these ideas. This is the start of the Periodic Table of Elements.

When he had finished with all the elements that were known in 1869, he noticed that there were blank spaces or gaps in his arrangement of the elements. He made a prediction that three new elements would be found. He was able to list some of their characteristics because he thought they would follow the same patterns that the others followed. Scientists were astounded when the elements gallium, scandium and germanium were found during the next 17 years. These discoveries proved Mendeleev's theory and the Periodic Table of Elements now has a permanent place in all books about chemistry and in classrooms around the world.

Today we have over 100 elements and we organize them by atomic number rather than atomic mass. But the patterns Mendeleev discovered and the basic organization of the Periodic Table remains a valuable contribution to students of chemistry.

Mendeleev Figures It Out



Across

2. Subject Mendeleev was fascinated by
5. A physical property of matter
8. One of the elements that Mendeleev predicted
9. How Mendeleev placed them in order
10. Number of all the known elements in Mendeleev's time
11. How elements are organized today
12. Solid liquid or gas

Down

1. The number of elements Mendeleev predicted would be found.
3. The temperature at which a substance melts
4. What Mendeleev figured out
6. Approximate number of elements today
7. The temperature at which a substance boils