

## 1.18 - Organizing the Elements

Read p. 48-49 in your textbook and fill in the blanks.

By the mid-1800s about 60 elements had been discovered. Scientists had a lot of information about these elements but it wasn't organized + it was not useful.

What ways **did not** work when scientists tried to organize the elements?

alphabetically, colour, taste,

Properties such as conductivity, malleability and lustre allowed scientists to group the elements into metals and non metals.

Scientists found that most elements were metals and all these elements seemed to conduct, malleable + shiny.

A property that was different for each element was Atomic mass.

Mendeleev came up with the best arrangement for the 64 elements that were known then.

Mendeleev looked at chemical and physical properties and found that based on properties some elements were similar.

Mendeleev found that elements with similar properties fit in the same vertical columns.

Mendeleev had gaps in his table for elements that had not yet been discovered.

When Mendeleev had finished his arrangement, his table of elements showed a pattern that repeated based upon the elements properties.

Periodic means... repeats.

Scientists realized that the key to the identity of an element was # protons, also known as the atomic # number and NOT the mass #.

State the modern Periodic Law: if elements arranged according to atomic # a pattern can be seen in which similar properties occur regularly.

The periodic table is divided into 3 main groups: metals, nonmetals, metalloids

Elements with properties of metals and nonmetals are called metalloids.

Where are the metalloids found on the periodic table? stepped line

Why is silicon a metalloid? shiny, silvery, not malleable, partial conductor

**Activity:** Colour and label the different regions of the periodic table on your handout (like Fig. 3, p. 49).

**Answer:** Q. 1-5, p. 49 on the back of this paper.