

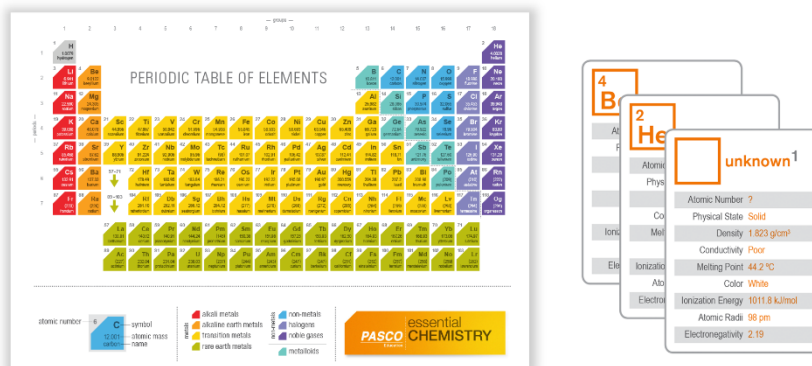
5A – PATTERNS AND TRENDS

INQUIRY

Using known properties of elements, can you reconstruct the periodic table?

MATERIALS

- Periodic Trend Cards
- Periodic table



BACKGROUND

In 1869, Dmitri Mendeleev organized the 56 elements into a table based on properties known at the time. He started by organizing the elements in order by their atomic mass and later realized that there were repeating patterns in their properties. He even went so far as to leave open gaps and spaces for elements that were yet to be discovered. Using the playing cards, organize the known elements into a pattern that re-creates the main group elements of the modern day periodic table. Examine the trends in the periodic table and "discover" the identities of the unknown elements.

SAFETY

Follow regular lab safety procedures.

PROCEDURE

1. Organize the elements based on the current positions in the main groups of the periodic table. Set aside the unknown elements for now.
2. Examine the properties of the known elements and compare them to the properties of the unknown elements.
3. Identify the unknowns and provide evidence statements that support your conclusions. Record your results in Table 1 on your answer sheet.

ANALYSIS

Complete the analysis on your answer sheet.

QUESTIONS

Answer the questions on your answer sheet.