

## Mendeleev's Periodic Table Lab SAMPLE DATA

Mendeleev arranged the first periodic table by writing all the properties of the known elements on notecards and then he arranged the notecards by properties.

We are modeling what Mendeleev did when he first arranged the elements. If you were in the lab, you opened a package of periodic table elements that are scrambled, see figure 1.

**Figure 1: PT Tiles Scrambled**



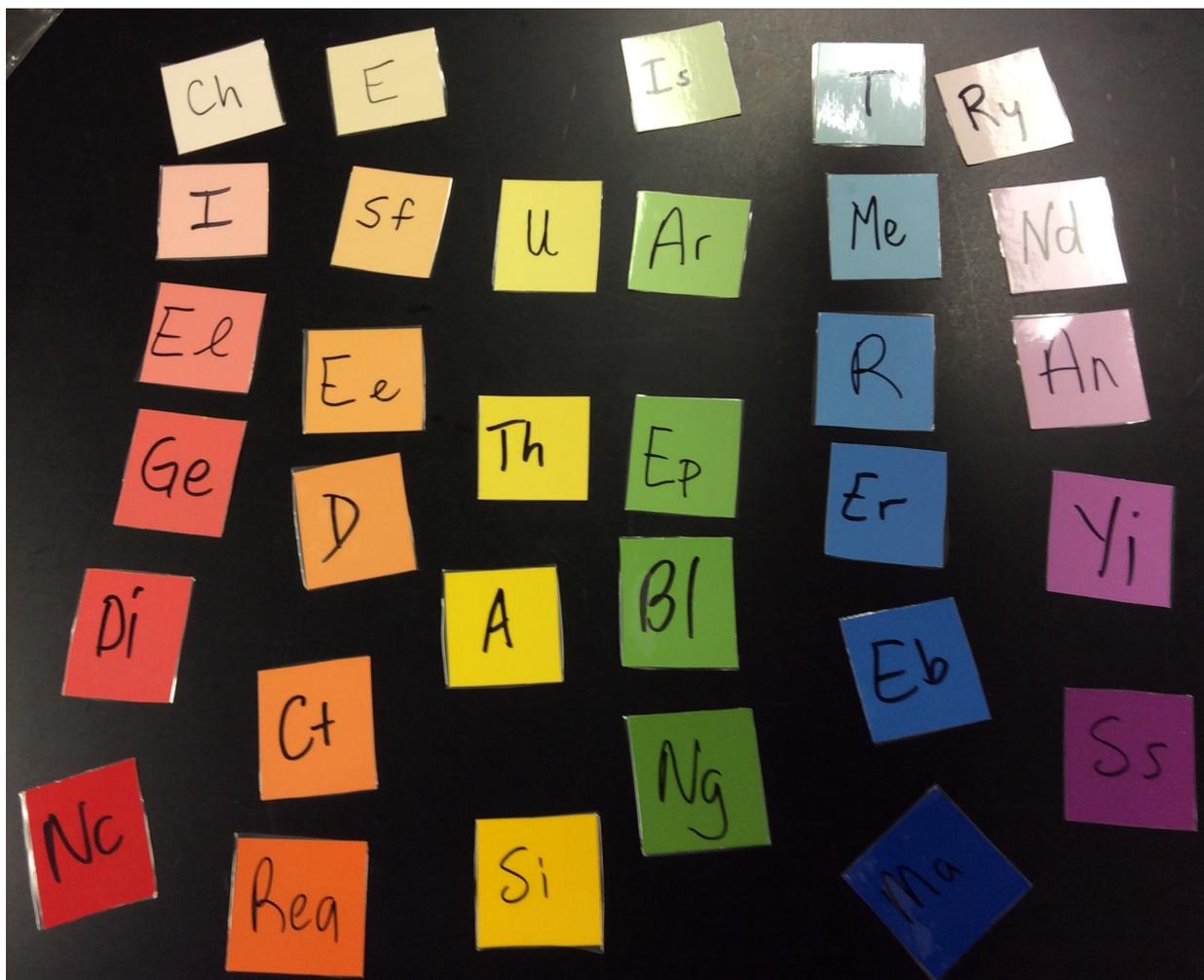
The next step is to sort the element notecards by common property. The color represents the common properties (such as the color during a flame test.) Mendeleev would have sorted the elements cards into R-O-Y-G-B-V colors (skipping indigo because it is so similar to violet.) See Figure 2.

**Figure 2: Sorting by Properties**



The next step is to sort the element cards, still in R-O-Y-G-B-V order from lightest at the top to darkest at the bottom. The shade represents the mass of the elements. The darker the shade, the heavier the element, see figure 3.

*Figure 3: Arranging the Periodic Table*



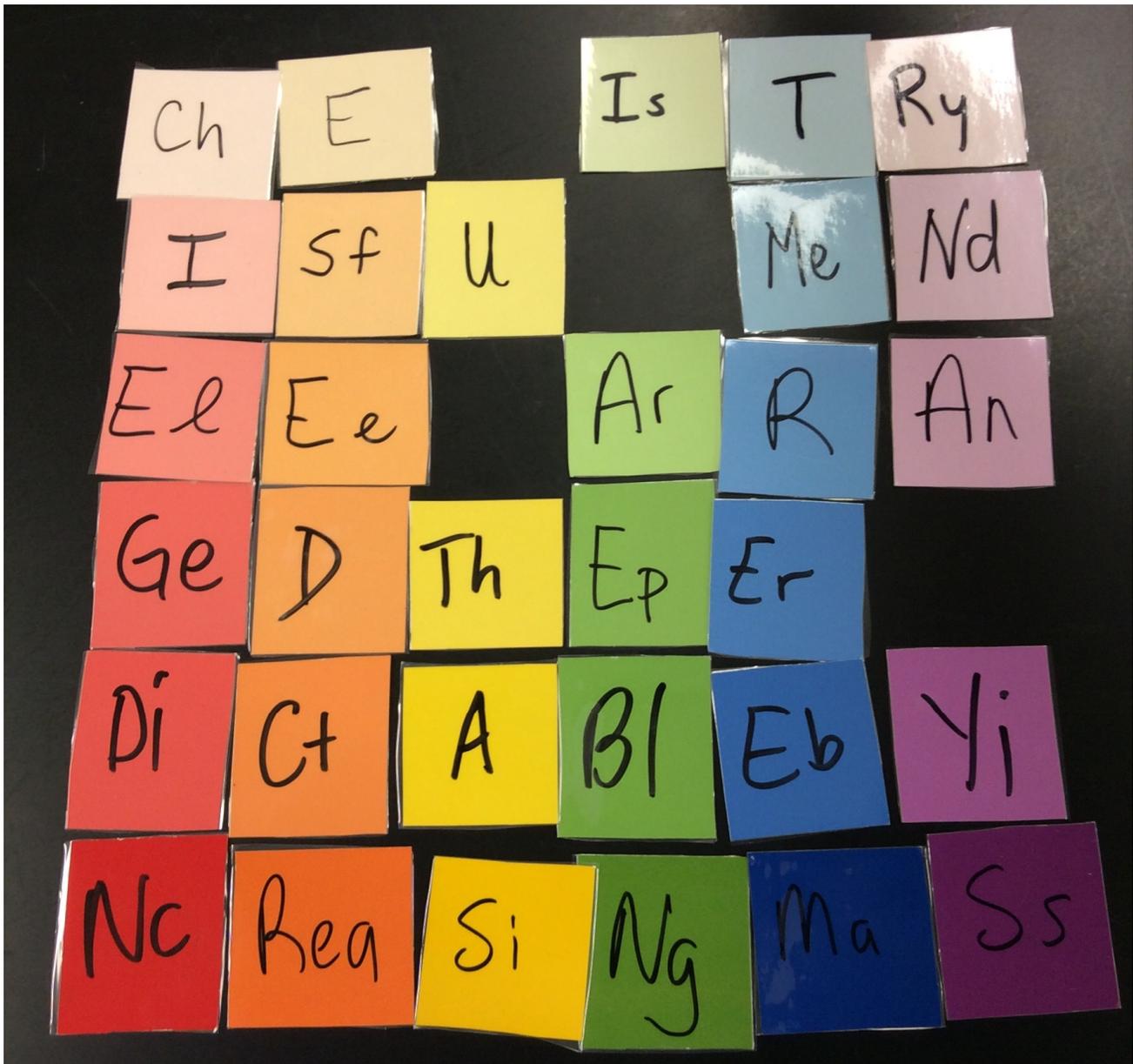
Notice that some elements have 6 tiles and some have 4 or 5. The generous of Mendeleev is that he left blank spaces where elements should fit, but were not yet discovered. Later elements were discovered that fit exactly where Mendeleev said they would go. He predicted the properties of elements that would be discovered in the future.

The next step is to scoot the elements closer together and see what message is in the table. It is a statement about the periodic table. You are missing elements and you will have to use the context clues of everything around to predict the missing colors and their element symbol (letters).

Now we have arranged the PT Tiles by R-O-Y-G-B-I-V and lightest to darkest.

Can you decode the secret message and predict the letters that go in the empty spaces? Answer on your lab paper in the chart.

**Figure 4: Decoding the Message**



Complete your pre-& post-lab questions and turn your lab in. Make sure you put a note on your lab that you were absent. Remember you get a day for each day you missed + 1. Good Luck!