

Elements

Directions

1. Given the blank periodic table, organize the cards to determine where the elements are on the periodic table. Put the blank cards off to the side for now.
2. On your blank laminated periodic table, draw a border around the blocks that correlate to your element cards.

Questions

1. What is the most important characteristic when identifying an element?
2. What is the common feature for elements in the same period (*horizontal row*)?
3. What is the common feature for elements in the same family or group (*vertical column*)?
4. What patterns do we see as we move from group to group or period to period?

Next Steps

1. Complete two of the blank cards for other elements with the following exceptions:
2. Don’t use transition metals
3. Don’t write in the Mass (amu)
4. Compare your element cards and blank periodic table to your 11x17 periodic table.
5. Did you organize and identify your element cards correctly?
6. What is the mass for your two blank cards?

Ions

Directions

1. Place the ion cards on top of the corresponding element cards.

Questions

1. What information did you use to pair up the element and ion cards?
2. Look at one of element-ion pairs.
3. Are the number of protons the same? Why or why not?
4. Are the number of neutrons the same? Why or why not?
5. Are the number of electrons the same? Why or why not?
6. Why is the mass the same for the elements and the ions? What is the mass based on?
7. Calculate the charge for each ion and write it on the highlighted block of the laminated periodic table.
8. What pattern do you see with respect to the charge and the family or group? Write the charge at the top of each group on your laminated periodic table.
9. Compare the number of energy levels between the element and corresponding ion
10. In what groups (I, II, etc.) did the number of energy levels increase from element to ion?
11. In what groups (I, II, etc.) did the number of energy levels decrease from element to ion?
12. In what groups (I, II, etc.) did the number of energy levels stay the same from element to ion?
13. What can we say about whether the number of electrons decreases and the number of energy levels? If electrons are lost is an energy level lost as well?

Next Step

1. Complete two ion blank cards for the other elements you chose.

Isotopes

Directions

1. Place the isotope cards on top of the corresponding element cards.

Questions

1. What information did you use to match the isotope cards with the element and ion cards?
2. Look at an element-ion-isotope set.
3. Is the mass of the isotope greater than, less than, or equal to the mass of the element or ion?
4. Did the element gain or lose neutrons to become an isotope? Or did the number of neutrons stay the same?
5. How does the change in mass relate to the change in number of neutrons?
6. Did the number of electrons, valence electrons, or energy levels change between the element and the isotope?
7. Do you see any pattern with respect to whether the element gained or lost neutrons and its location on the periodic table?

Next Step

1. Can you complete an isotope card to go with the element and ion cards you created?

