Elemental, My Dear Watson

Skills: *interpreting a table, applying, identifying*

The famous detective Sherlock Holmes used all kinds of clues to solve the mysteries. Like any good detective, he knew the value of fingerprints, because no two people have the same fingerprints. In a way, atomic numbers are like fingerprints, because no two elements have the same atomic number. In this activity, you will be a chemical detective who tracks down elements by deducing their atomic numbers. Use the periodic table to help you.

Link to Periodic Table

For your answers use the element symbols.

elements in water symbol/Atomic # ___/___ ____/____

1. **The atomic number of element X is 6 less than the atomic number of element Y. Element Y is one of the elements that make up water. What are elements X and Y?** X is _____ Y is _____

Listen

2. **To find element Z, start at the beginning of Period 2 on the Periodic Table. Move to the right until you come to an element whose atomic umber is 6 more than the atomic number of the first element in the period. What is element Z?** _____ Listen

3. **Element D loses two electrons in a chemical reaction. Now it has the same number of electrons as neon. What is element D?** _____ If it loses 2 Valence eletrons it is in family ___ Neon has ____ electrons

4. **If the atomic numbers of calcium and beryllium are added together, you'll find this element. What is the element?** _____ Atomic Number of: Ca___ Be___

5. **Element Q has an atomic number that is less than that of iron and 5 times that of a nonmetal in Group 13. What is its atomic number?** _____ **What is element Q?** _____ This means it is less then __

Listen

6. **This metal element has an atomic number that some people think is unlucky. What is the element? What did you guess is its atomic number?**

7. **Add together the atomic numbers of the first three noble gases, and you'll have the atomic number of this element. What is the element?** _____ He ___ + Ne + ___ Ar ___ = ___

8. **The atomic number of element J is greater than the atomic number of platinum but less than the atomic number of lead. Its atomic number is divisible by 4. What is element J?**

_____ Platinum _____ > J > ____ Lead, so J could be ____, ____, ____. You can divide it by 4, so it must be _____

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