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| Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Atomic Structure and the Periodic Table

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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|  |  |  |  |  |  |  |  |  |  |  |  |  | 1  N |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  | 2  R | O | W |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | B |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | L |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | 3  E |  | 4  P | E | R | I | O | D | I | 5  C | T | A | B | L | E |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | L |  |  | G |  |  |  |  |  | A |  |  |  |  |  |  |  |  |  |  |
|  |  | 6  S | U | 7  B | S | T | A | N | C | E | S |  | 8  A | T | O | M |  | 9  P | R | O | P | E | R | T | I | E | S |  |  |
|  |  |  |  | O |  |  |  |  |  | C |  |  | S |  |  |  | 10  C |  | B |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | N |  |  | 11  I | S | O | T | O | P | E |  |  |  | H |  | O |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | D |  |  |  |  |  | R |  |  | S |  | 12  E |  | E |  | N |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  | S |  |  | 13  H |  |  | O |  |  |  |  | I |  | M |  |  |  | 14  P |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  | 15  V | A | L | E | N | C | E |  |  | G |  | I |  |  | 16  C | O | L | U | M | 17  N |  |  |  |  |
|  |  |  |  |  |  |  | L |  |  | C |  |  | 18  R |  | H |  | C |  |  |  | S |  |  |  | E |  |  |  |  |
|  |  |  |  |  |  | 19  I | O | N |  | L |  | 20  N | E | U | T | R | A | L |  |  | I |  |  |  | G |  |  |  |  |
|  |  |  |  | 21  F |  |  | G |  |  | O |  |  | P |  |  |  | L |  |  |  | T |  |  |  | A |  |  |  |  |
|  |  | 22  S | T | A | B | L | E |  | 23  N | U | C | L | E | U | S |  | F |  | 24  A |  | I |  |  |  | T |  |  |  |  |
|  |  |  |  | M |  |  | N |  |  | D |  |  | L |  |  |  | O |  | T |  | V |  |  |  | I |  |  |  |  |
|  |  |  |  | I |  |  | S |  |  |  |  |  |  |  |  |  | R |  | O |  | E |  |  |  | V |  |  |  |  |
|  |  |  |  | L |  |  |  |  |  |  | 25  I | O | N | I | C |  | M |  | M |  |  |  |  |  | E |  |  |  |  |
|  |  |  |  | Y |  |  |  |  |  |  |  |  |  |  |  |  | U |  | I |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  | 26  C | H | E | 27  M | I | 28  C | A | L |  | C |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | O |  | O |  | A |  | N |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | L |  | V |  |  |  | U |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | E |  | A |  |  |  | M |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  | 29  C | H | E | M | I | C | A | L | S | Y | M | B | O | L |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | U |  | E |  |  |  | E |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  | L |  | 30  N | E | U | T | R | O | N | S |  |  |  |  |  |  |  |
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| **Across**  **2.** Each \_\_\_\_\_\_\_\_\_\_ on the Periodic Table represents the number of "energy levels" an element has.  **4.** The elements are organized into this grid.  **6.** When elements react they form new \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  **8.** The smallest unit of matter with all the properties of that substance.  **9.** Characteristics that are measurable or observable are called physical \_\_\_\_\_\_\_\_\_\_\_\_\_.  **11.** An element that can have a variable number of neutrons in its nucleus.  **15.** The "outer energy shell" of and atom  **16.** Each \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on the periodic table represents the number of valence electrons in an element.  **19.** A charged particle.  **20.** A neutron has a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charge.  **22.** Atoms with full outer energy shells are known to be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  **23.** The center of an atom where the protons and neutrons are located.  **25.** Electrons are "stolen" in this type of bond.  **26.** Reactivity is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ property.  **29.** An abreviated way to name an element.  **30.** Subtract the atomic number from the atomic mass to find the number of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. | **Down**  **1.** A "Family" of elements that do not typically react with other elements.  **3.** The location around the nucleus where electrons orbit.  **5.** This element is found in all organic matter and has four valence electrons.  **7.** The "electronic connections" between elements in a molecule.  **10.** NaCl is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ for salt.  **12.** Other than hydrogen and helium, the number of electrons needed to fill the valence shell.  **13.** The "Family" of elements that are very reactive.  **14.** Protons have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charge.  **17.** Electrons have a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ charge.  **18.** "Like" electric charges \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ each other.  **21.** A group of elements with similar properties are known as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  **24.** This matches the number of protons in an atom.  **27.** A combination of one or more atoms.  **28.** Electrons are "shared" in this type of bond. |