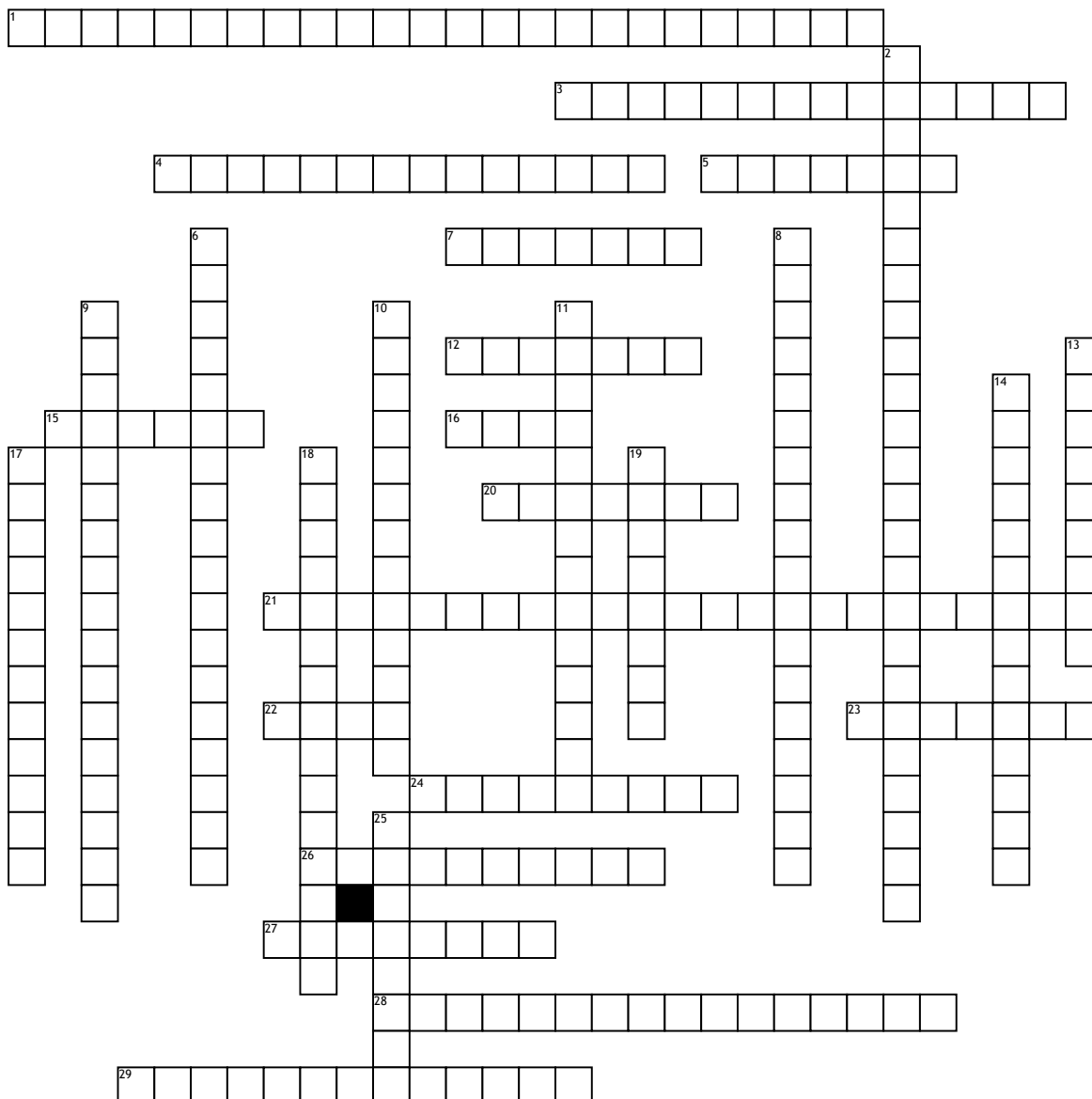


Name: \_\_\_\_\_

# chemistry



## Across

1. if two or more different compounds are composed of the same two elements with a certain mass of the first element is always a ratio of small whole numbers
3. the mass number is written with a hyphen after the name of the element
4. experiments done in this tube with electrons and a magnet
5. a proton or neutron; particle found in the nucleus
7. is a general term for a specific isotope of an element
12. isotope of hydrogen with a total of 3 nucleons
15. positively charged particles in the nucleus; mass of 1 amu
16. the smallest particle of an element that retains the chemical properties of that element
20. is a very small region located at the center of an atom

21. states that mass is neither created nor destroyed during ordinary reactions or physical changes
22. is the amount of a substance that contains as many particles as there are atoms in exactly 12g of carbon-12
23. the most common type of hydrogen; an isotope with one nucleon
24. negatively charged particles present in a cloud around the nucleus; have a mass of almost zero
26. is the total number of protons and neutrons that make up the nucleus of an isotope
27. neutral particles in the nucleus of an atom; mass of 1 amu
28. Thomson's model for the atom; electrons are present scattered throughout a positive field
29. shows the composition of a nucleus (mass and atomic number)

## Down

2. the fact that a chemical compound contains the same elements in exactly the same proportions by mass regardless of the size of the sample or source of the compound

6. protons, neutrons and electrons
8. isotopes made in a lab
9. is the weighted average of the atomic masses of the naturally occurring isotope of an element
10. these short range proton-neutron, proton-proton, and neutron-neutron forces hold the nuclear particles together
11. 1 amu, or is exactly 1/12 the mass of a carbon-12 atom
13. the mass of one mole of a pure substance
14. positively charged particles with about four times the mass of a hydrogen atom
17. the number of protons of each atom of that element
18.  $6.0221415 \times 10^{23}$  is the number of particles in exactly one mole of a pure substance
19. isotope of hydrogen with a total of 2 nucleons
25. atoms of the same element that have different masses; vary in number of neutrons