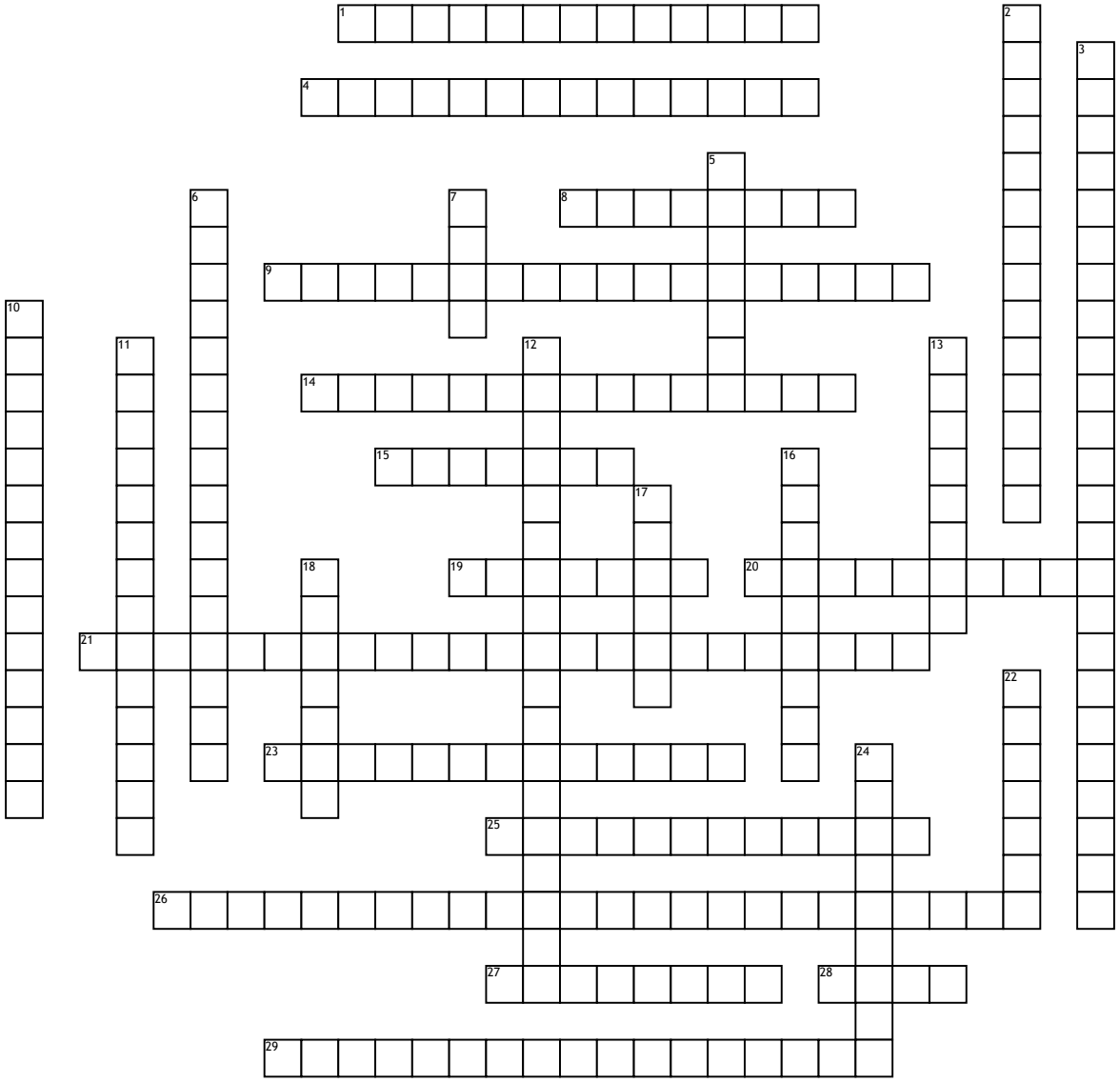
Name: _____ Date: _____

chemistry



Across

1. these short range proton-neutron, proton-proton, and neutron-neutron forces hold the nuclear particles together

4. 1 amu, or is exactly 1/12 the mass of a carbon-12 atom

8. neutral particles in the nucleus of an atom; mass of 1 amu

9. protons, neutrons and electrons

14. 6.0221415 x 10^23 is the number of particles in exactly one mole of a pure substance

15. is a general term for a specific isotope of an element

19. a proton or neutron; particle found in the nucleus

20. is the total number of protons and neutrons that make up the nucleus of an isotope

21. states that mass is neither created nor destroyed during ordinary reactions or physical changes

23. shows the composition of a nucleus (mass and atomic number)

25. the number of protons of each atom of that element

26. 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

27. atoms of the same element that have different masses; vary in number of neutrons

28. is the amount of a substance that contains as many particles as there are atoms in exactly 12g of carbon-12

29. is the weighted average of the atomic masses of the naturally occuring isotope of an element

Down

2. the mass number is written with a hyphen after the name of the element

3. 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

5. isotope of hydrogen with a total of 3 nucleons

6. Thomson's model for the atom; electrons are present scattered throughout a positive field

7. the smallest particle of an element that retains the chemical properties of that element

10. positively charged particles with about four times the mass of a hydrogen atom

11. experiments done in this tube with electrons and a magnet

12. isotopes made in a lab

13. isotope of hydrogen with a total of 2 nucleons

16. the mass of one mole of a pure substance

17. postively charged particles in the nucleus; mass of 1 amu

18. the most common type of hydrogen; an isotope with one nucleon

22. is a very small region located at the center of an atom

24. negatively charged particles present in a cloud around the nucleus; have a mass of almost zero