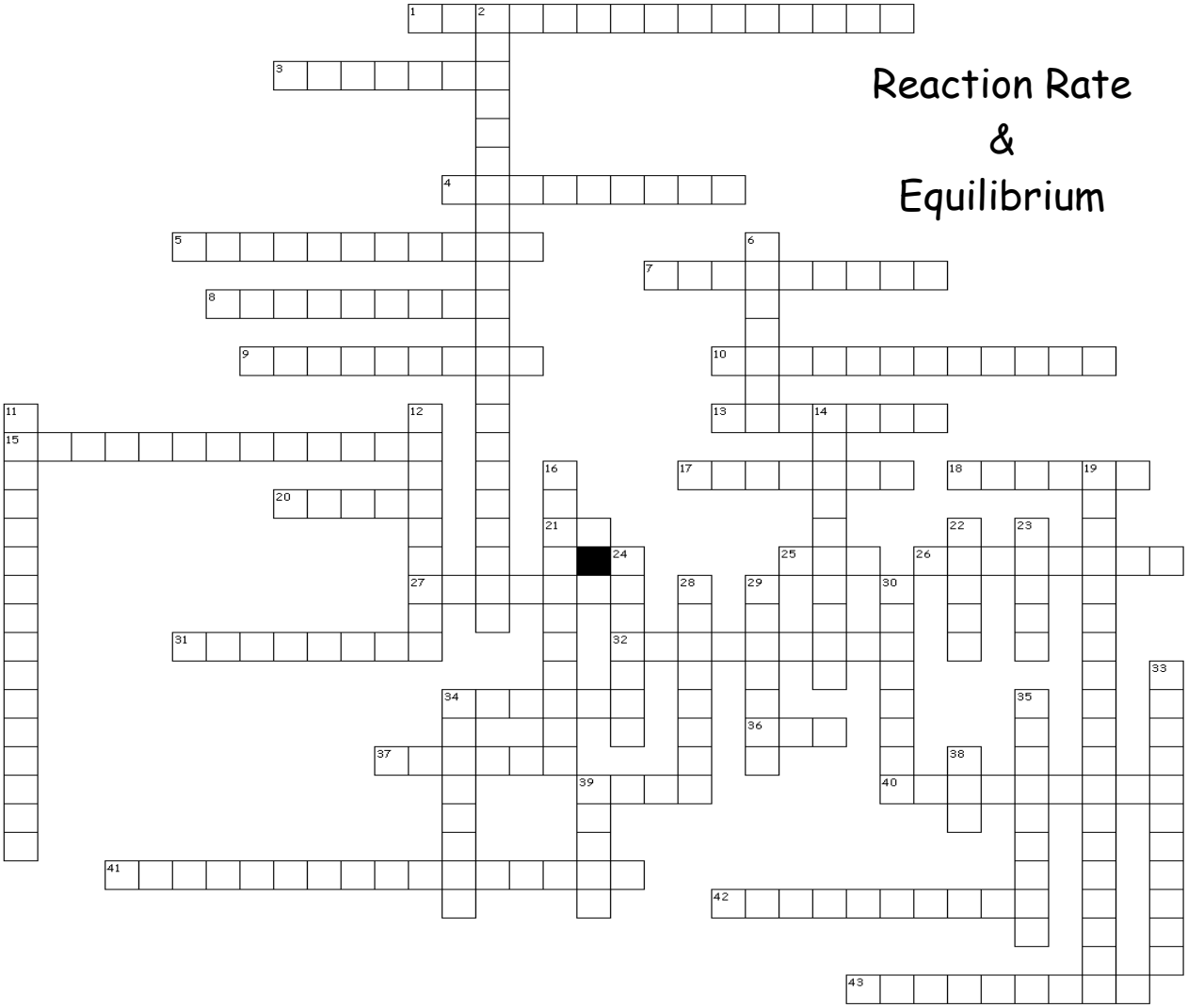
Reaction Rate & Equilibrium



Across

1. reacting particles must collide successfully for a reaction to occur
3. ongoing
4. reaction _ is the series of steps that a reaction follows
5. reaction that requires energy
7. study of matter, its composition, and its interactions
8. A substance that slows down a chemical reaction
9. the mass of one mole of a substance
10. product of one step of a reaction mechanism that immediately becomes a reactant in another step
13. equation that expresses the relationship between the rate of a reaction and the concentration of the reactants
15. molarity
17. dissolved in water
18. anything that has mass and occupies space
20. H_2O
21. 1 L = 1000 __
25. equilibrium constant
26. [ ]
27. substance that has other substances dissolved in it
31. substances on right side of equation
32. stored energy
34. substance that is dissolved in a solution
36. charged particle
37. molarity = moles divided by __
39. enthalpy
40. based on observations
41. The temporary arrangement of atoms as they change from reactants into products
42. can proceed in either the forward or reverse direction
43. substances on the left side of equation

Down

2. when a system at equilibrium is subjected to a stress, the equilibrium will shift to relieve the effects of the stress
6. NH_3
11. The amount of energy required to form an activated complex
12. increasing temperature __ the rate of reaction
14. reaction that releases energy
16. measure of the average kinetic energy of the particles
19. ratio of the concentrations of the products to the concentrations of the reactants at equilibrium
22. = mass divided by molar mass
23. pressure changes affect __
24. at equilibrium, the reaction appears to have __
28. A substance that increases the rate of a chemical reaction
29. energy of motion
30. contains two or more atoms bonded together
33. both the forward and reverse reactions are happening at the same rate
34. homogeneous mixture
35. decreasing concentration of reactants __ the rate of reaction
38. pressure is measured in __
39. scientist who first produced ammonia from nitrogen and hydrogen