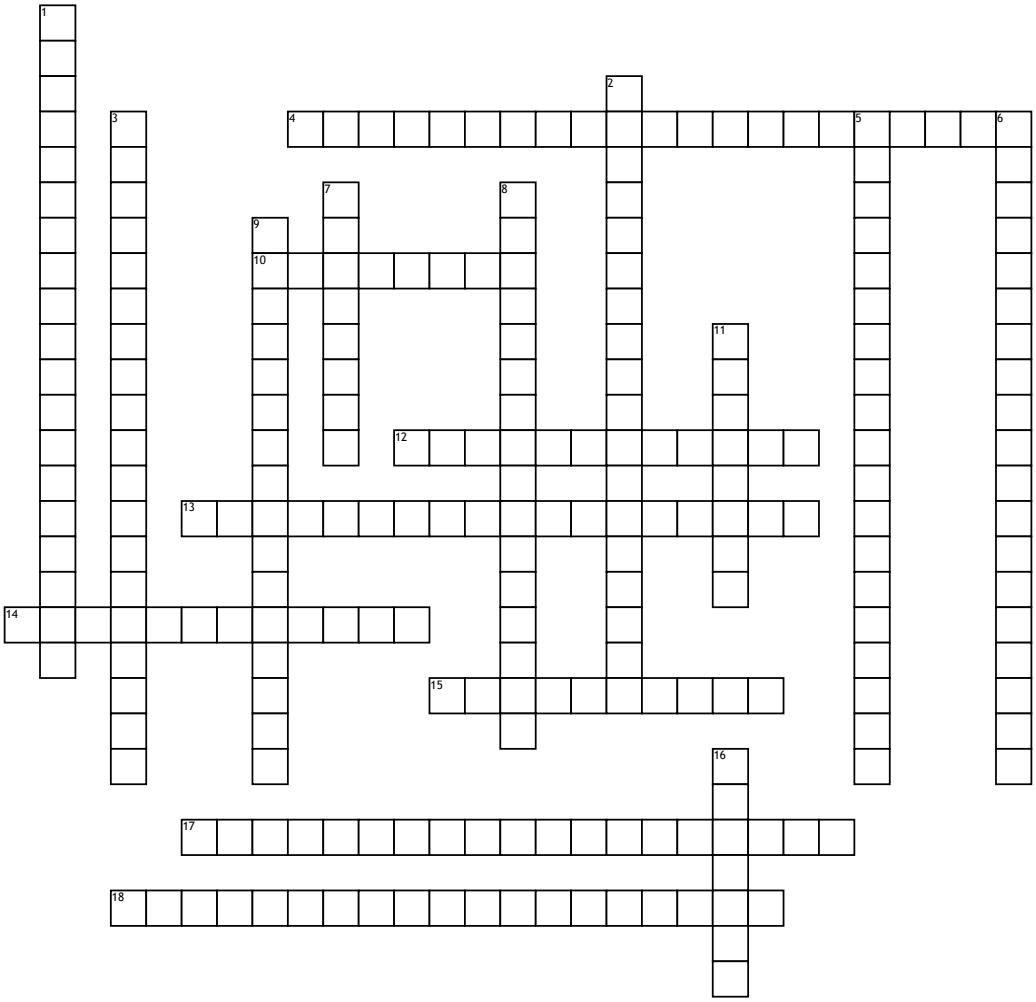
Energy and Chemical Reaction



Across

4. Can be used to predict the effect of a change in conditions on a chemical equilibrium

10. Substance that increases the rate of a chemical reaction by reducing the activation energy, but which is left unchanged by the reaction

12. An important industrial process which creates ammonia

13. Chemical reaction that releases energy by light or heat. It is the opposite of an endothermic reaction

14. Speed of reaction for a reactant or product in a particular reaction is intuitively defined as how fast or slow a reaction takes place

15. (G) Amount of usable energy in a system

17. (K) A way to quantify the concentrations of the reactants and products at equilibrium

18. Occurs without energy input

Down

1. The slowest rate in a reaction

2. a reaction that takes place in either direction according to conditions

3. Process or reaction in which the system absorbs energy from its surroundings in the form of heat

5. A state in which the rates of forward and reverse reactions are the same

6. When there is stress on the equilibrium

7. (H) The heat content of a system at constant pressure

8. Structure that results in maximum energy point along reaction path

9. Minimum amount of energy required by reacting particles in order to form the activated complex and lead to a reaction

11. The study of the changes in concentrations of reactants or products as a function of time

16. (S) Measure of randomness or lack of orderliness in a system

Word Bank

Catalyst
LE CHATELIERS PRINCIPLE
REVERSIBLE REACTION
ENTROPY
REACTION RATE
EQUILIBRIUM STRESSES
SPONTANEOUS REACTION
ActivationEnergy
FREE ENERGY
ENDOTHERMIC REACTION
ACTIVATED COMPLEX
EXOTHERMIC REACTION
HABER PROCESS
KINETICS
EQUILIBRIUM CONSTANT
ENTHALPY
CHEMICAL EQUILIBRIUM
RATE DETERMINING STEP