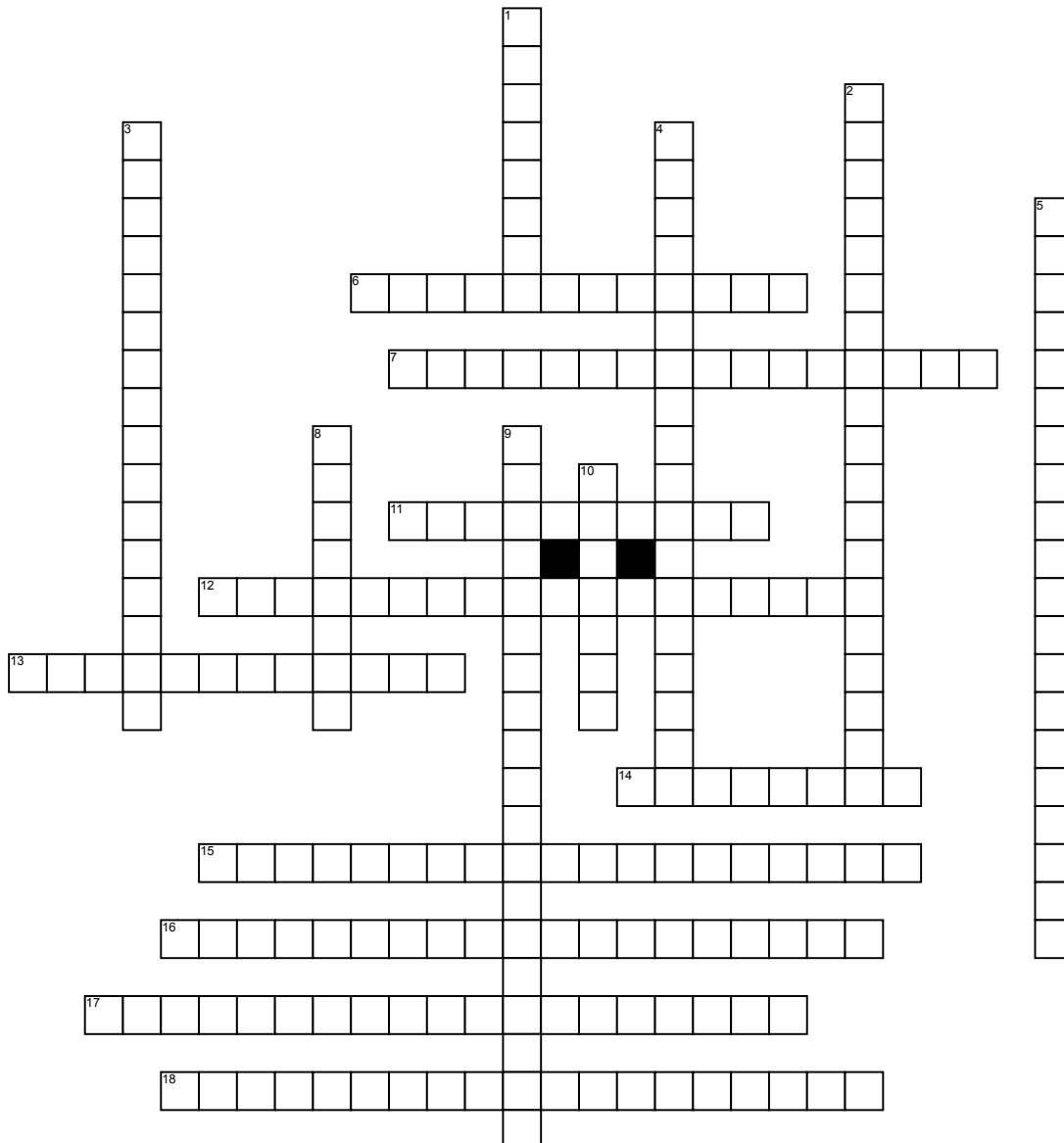


Name: \_\_\_\_\_

Date: \_\_\_\_\_

# Energy and Chemical Reactions



## **Across**

**6.** change of concentration in a unit of time

**7.** energy needed to move reactants into the activated complex

**11.** indication of how spontaneous a reaction is, as determined by the effects of heat, temperature, and entropy

**12.** reaction that releases heat energy

**13.** method of producing ammonia from hydrogen and nitrogen

**14.** total energy content of a substance

**15.** ratio of the concentrations of the products to the reactants in a reversible reaction at equilibrium

**16.** reaction that absorbs heat energy

**17.** reaction that takes place without the addition of outside energy

**18.** changes that alter the reaction rate adjusting the direction of reaction movement

## **Down**

**1.** substance that speeds up a reaction without itself being permanently changed

**2.** slowest step in a reaction

**3.** temporary group of atoms that form as reactant particles rearrange to form products

**4.** reaction in which the products can react to produce the original reactants

**5.** principle stating that if a reversible reaction at equilibrium is stressed, it will shift to relieve it

**8.** area of chemistry concerned with rates of chemical reactions

**9.** state in which the forward and reverse reactions of a reversible reaction proceed at the same rate

**10.** measure of randomness or disorder