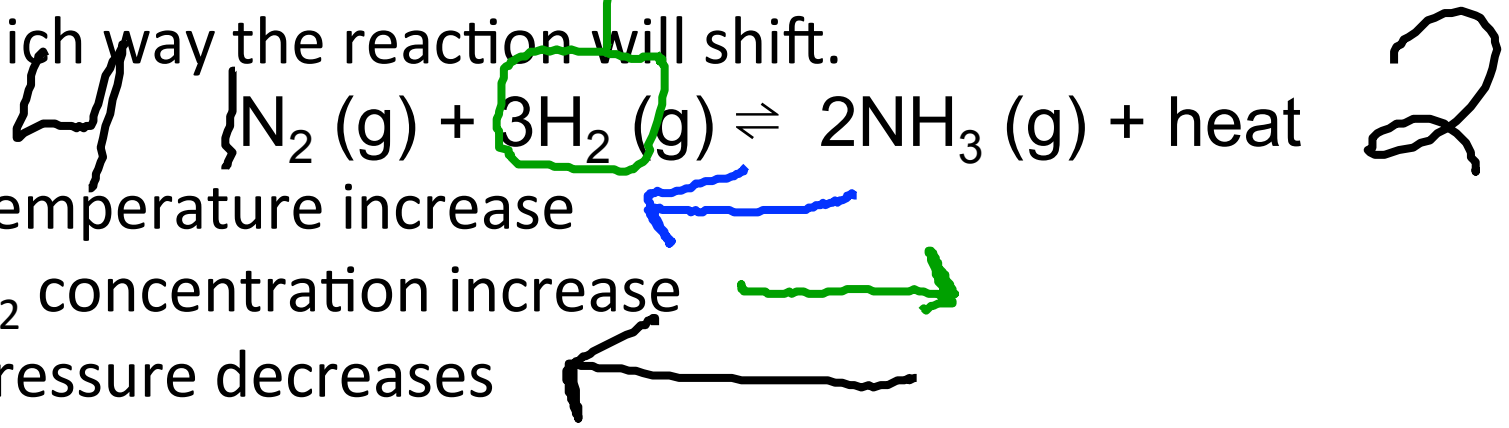
Unit 7 NAME

Class Work 3/4/14

7.4 Potential Energy Diagram

SPARK

Given the following reaction in chemical equilibrium, predict which way the reaction will shift.



$$N_2\,(g) + 3H_2\,(g) \rightleftharpoons 2NH_3\,(g) + \text{heat}$$

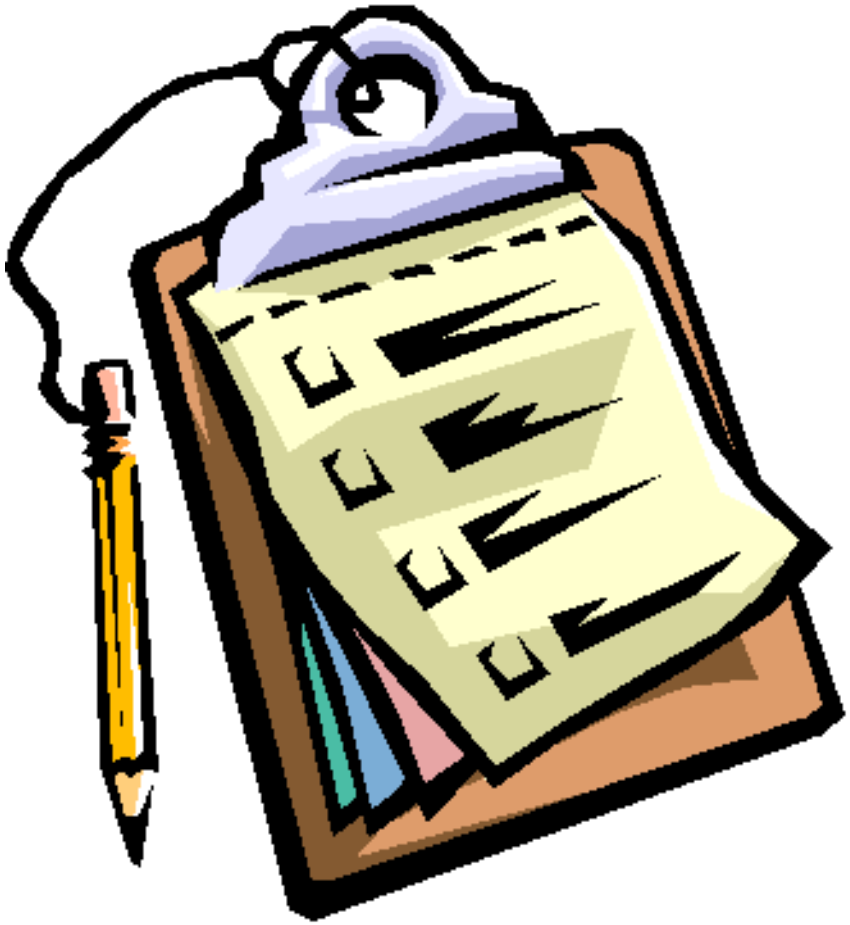
1. Temperature increase
2. H_2 concentration increase
3. Pressure decreases

Objective

SWBAT identify a potential energy diagram and distinguish between an exothermic reaction versus an endothermic reaction.

Agenda:

- SPARK/Objective
- Notes
- Practice
- Homework



Objective: SWBAT identify a potential energy diagram and distinguish between an exothermic reaction versus an endothermic reaction.

Notes

exit!

heat is a product!

- Chemical reactions can react in both the FORWARD and REVERSE directions
- All chemical reactions need ENERGY
- Reactions can either release energy (EXOTHERMIC- energy is a PRODUCT) or absorb energy (ENDOTHERMIC- energy is a REACTANT)

enter! → heat is a reactant

Objective: SWBAT identify a potential energy diagram and distinguish between an exothermic reaction versus an endothermic reaction.

$\Delta T = T_f - T_i$

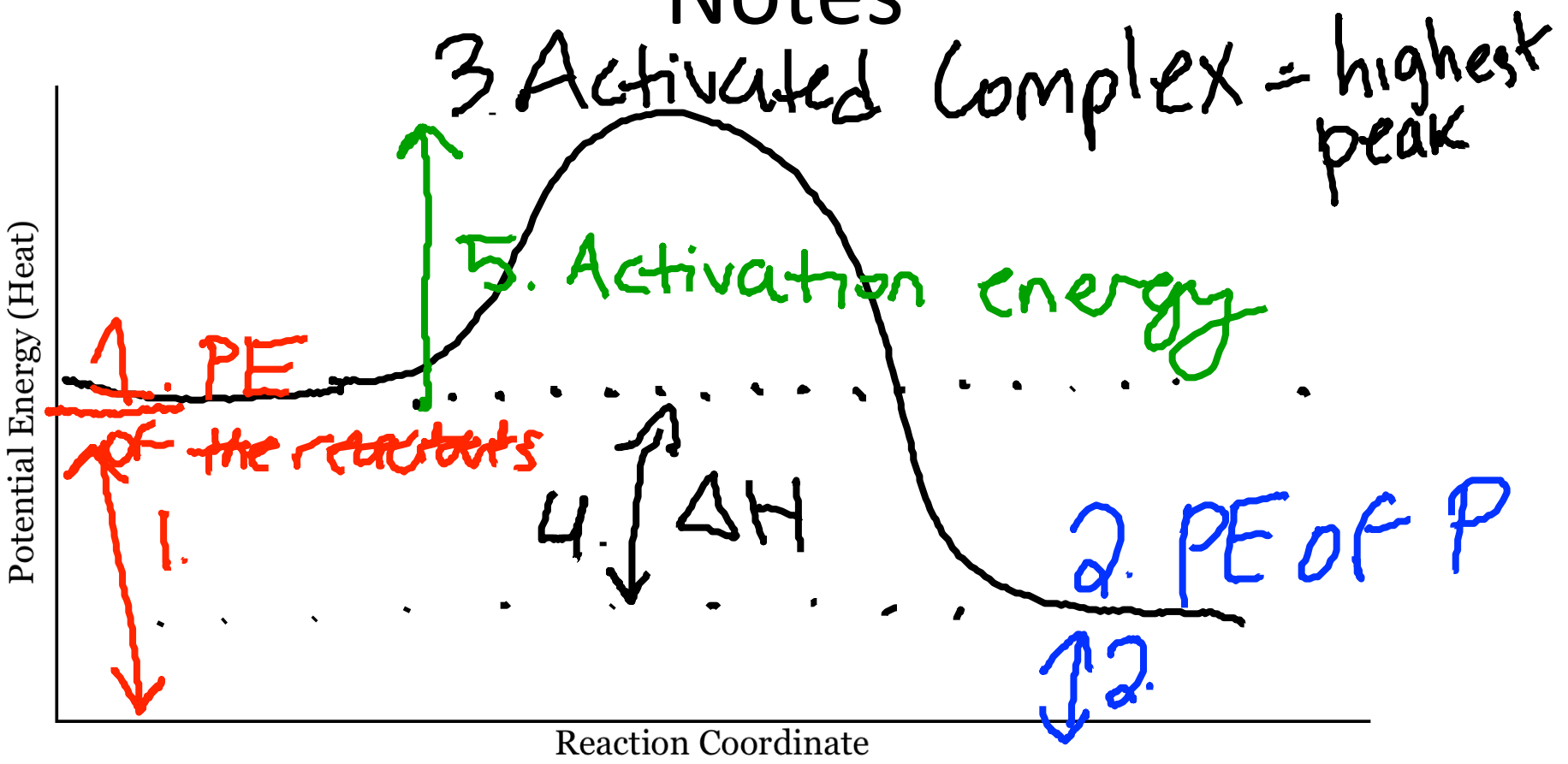
Notes

$\nearrow \Delta H$

- Heat of formation also known as ENTHALPY is difference in potential energy or HEAT between the reactants and products.
  - We use the following equation to calculate the heat of formation =
    - Potential Energy Products (PEP) – Potential Energy of the Reactant (PER)
    - For HEAT of FORMATION…. THINK – PEPPER

Objective: SWBAT identify a potential energy diagram and distinguish between an exothermic reaction versus an endothermic reaction.

Notes



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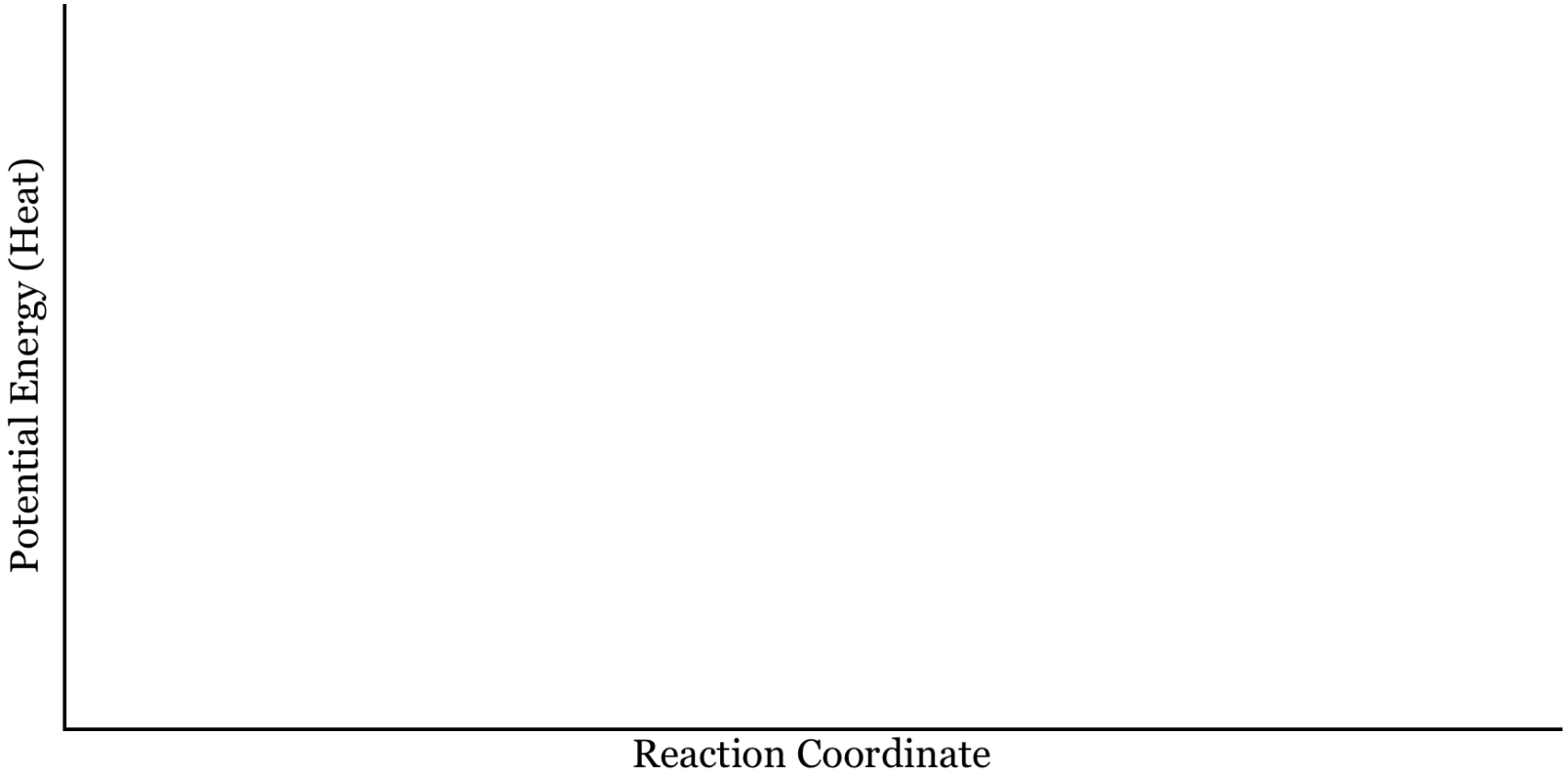

Objective: SWBAT identify a potential energy diagram and distinguish between an exothermic reaction versus an endothermic reaction.

Notes

- If ΔH is positive, the reaction is ENDOTHERMIC
- If ΔH is negative, the reaction is EXOTHERMIC

Example:

1. A reaction has a ΔH of +100 kJ. Will this reaction be endothermic or exothermic? _____
2. A reaction has a ΔH of -11 J. Will this reaction be endothermic or exothermic? _____

Objective: SWBAT identify a potential energy diagram and distinguish between an exothermic reaction versus an endothermic reaction.

Document Camera Time!

Objective: SWBAT identify a potential energy diagram and distinguish between an exothermic reaction versus an endothermic reaction.

HOMEWORK

Complete the rest of your 7.4 packet!

Objective: SWBAT identify a potential energy diagram and distinguish between an exothermic reaction versus an endothermic reaction.