**Supporting Information**

Survey Questions:

1. “*Which of the following statements do you agree with? (Note: You can select multiple statements)*”

|  |  |
| --- | --- |
| Statement | Misconception? |
| The concentration of the reactants and the products are the same, when the reaction is in dynamic equilibrium. | Yes |
| In a dynamic equilibrium, the rates of the forward and reverse reactions are equal. | No |
| The temperature in a dynamic equilibrium is always constant. | Yes |
| A closed system is a feature of a dynamic equilibrium. | Yes |
| A chemical equilibrium can only exist if the reactants and products are in the same state. | Yes |
| Once the reaction reaches equilibrium, the reaction has then finished. | Yes |
| During an equilibrium, the forward and reverse reactions occur simultaneously. | No |
| Adding a catalyst increases the yield of the product. | Yes |
| Adding a catalyst increases the rate of both the forward and reverse reactions by the same amount. | No |
| A catalyst has no effect on the reaction rate at equilibrium | Yes |
| A catalyst lowers the activation energy of a reaction at equilibrium. | No |
| An increase in the pressure will shift the equilibrium to the direction which produces fewer moles of gas. | No |
| As temperature increases, the rate of the forward reaction always increases. | Yes |
| Volume doesn’t effect the position of the equilibrium. | Yes |
| None of the above. | - |

**Table A:** A list of true statements and misconceptions

1. “*How do you learn a new topic most effectively?*”.

Options:

* By taking notes
* By using visual displays
* By listening
* By practical interaction
* By practice questions

1. “*How do you think teaching could be improved to avoid common misconceptions regarding chemical equilibria?*”