**Jigsaw Activity for Understanding Phage Immunity Systems:**

**Fundamental Concepts in Phage Immunity**

**Student Activity**

Part 1: Define (For each student)

Superinfection immunity is associated with the presence of a prophage within a bacterial cell. Before exploring your group assignments, please reinforce your knowledge of the fundamentals of phage biology. Begin by briefly defining each of the following terms, in no more than 1-2 sentences. If you are being introduced to a term for the first time, please provide a longer explanation.

1. Virulent phage
2. Lysis
3. Temperate phage
4. Lysogeny
5. Prophage
6. Lysogen
7. Genetic switches
8. Superinfection, secondary Infection, coinfection
9. Multiplicity of Infection (MOI)
10. Superinfection immunity
11. Phage insensitivity
12. Phage resistance

Part 2: Explore (For Collaborative groups)

Each group is tasked with exploring a key concept associated with phage immunity systems.

Phage Integration Groups:

1. Phage Integration Systems
2. Integrase (*int*)
3. Chromosomal attachment sites (*att*)
4. Repressor
5. Operator
6. Phage Partitioning systems (*parABS*)
7. Exclusion proteins

Phage Immunity Groups:

1. Homoimmunity
2. Heteroimmunity
3. Superinfection exclusion