

Figure 1 shows four types of 2D hexagonal lattices: (a) Hexagonal lattice, (b) Honeycomb lattice, (c) Kagome lattice, and (d) Triangular lattice. Each lattice is represented by a set of black dots (sites) connected by lines (bonds). The hexagonal lattice has a central site connected to six surrounding sites. The honeycomb lattice has two interlocking triangular sublattices. The kagome lattice has a central site connected to three surrounding sites in a triangular arrangement. The triangular lattice has a central site connected to six surrounding sites in a triangular arrangement.

Figure 1 shows a 3x10 grid of dots. The dots are arranged in three rows and ten columns. The first row has dots in columns 1, 2, 4, 5, 6, 8, 9, 10. The second row has dots in columns 1, 3, 4, 6, 7, 8, 9, 10. The third row has dots in columns 1, 2, 3, 5, 6, 7, 9, 10. This represents a 3x10 Latin square where each column contains exactly one dot from each row.