

## **DAY 1 Concepts**

### **Physics**

- Charge is conserved
- Like charges repel, unlike attract
- Electric field = force per unit charge
- Coulomb's law is inverse square

### **Chemistry (Solid State)**

- Solids differ by bonding
- Lattice vs unit cell
- Shape depends on arrangement of atoms

### **Maths**

- Relation describes connection between two sets
  - Domain and range identify valid inputs/outputs
  - Reflexive/symmetric/transitive → properties of relations
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## **DAY 2 Concepts**

### **Physics**

- Field lines → direction of force
- Closer lines = stronger field
- Flux measures how much field passes through a surface
- Gauss law relates flux and charge

### **Chemistry**

- Packing efficiency tells how tightly atoms are packed
- FCC has highest packing efficiency
- Voids exist in crystal structures

### **Maths**

- Function assigns exactly one y to each x
- Composite function means input of one becomes output of another
- One-one, onto, bijection classification