

Science vocabulary: particles and diffusion

Five terms

Particle: a small unit in a model of matter. Concentration: number of particles in a stated volume. Diffusion: net movement from higher to lower concentration due to random particle motion. Net movement: the overall direction after considering movements in both directions. Membrane: a boundary whose properties determine what can pass in a stated context.

Match all five

A. overall direction after movements in both directions; B. a boundary with particular passage properties; C. number per stated volume; D. a small model unit; E. net spreading from higher to lower concentration.

Terms: particle, concentration, diffusion, net movement, membrane.

Supplied particle pattern

Left region, volume 1 cm³: ● ● ● ● / ● ● ● ● / ● ● ● ● (12 particles).

Right region, volume 1 cm³: ● ● / ● ● (4 particles).

Both regions have equal volume. The dots are an illustrative count, not an actual measurement. The boundary is open to these particles for this diffusion example.

Explain the pattern

1. State which side has higher concentration, with the counts and equal volumes. 2. Explain the direction of net diffusion across this open boundary. 3. Explain why “all particles move only one way” is inaccurate. 4. If the boundary were a membrane, name a property you would need before predicting passage.

Working space

Higher concentration and evidence: _____. Net movement: _____. Random motion explanation: _____.
Missing membrane information: _____.

Check

Particles continue moving randomly even when concentrations become equal. Equal concentration gives no overall net movement. The example does not establish the permeability of a different membrane.