Particles of Matter

Chemistry · CBSE Class 9 · Matter in Our Surroundings · PrayogX short notes

▸ **Video explanation:** Watch the PrayogX reel on Instagram

In one line: matter looks continuous, but it is made of **extremely small particles**, too small to see even with a normal microscope.

Key definitions

Term	Meaning
Particle nature of matter	Matter is not continuous; it is made of very tiny particles.
Dissolve	A solid's particles spread out between the particles of a liquid to form a solution.
Dilute	Add more solvent (water) so the solution becomes weaker.

The NCERT activity: potassium permanganate ($KMnO_4$)

1. Dissolve 2-3 crystals of potassium permanganate in about 100 mL of water. The solution turns deep purple.
2. Take about 10 mL of this solution and add it to 90 mL of clear water.
3. Take 10 mL of the new solution into another 90 mL of clear water.
4. Repeat this 5-8 times.

Observation	Conclusion
Each glass is lighter, but the water stays coloured even after many dilutions.	A few crystals contain a very large number of very small particles that keep dividing into smaller ones.

Rule to remember

Matter is made of particles, and these particles are extremely small.

More evidence

- Salt or sugar dissolves in water and the water level hardly rises: the particles fit into the spaces between water particles.
- Dettol or ink spreads its smell or colour through a whole glass from just a few drops.

Common mistakes

- "The colour disappears when diluted." It gets lighter but stays visible for many dilutions.
- "Particles are the size of dust." They are far smaller; we cannot see them even with an ordinary microscope.

Quick check

1. Why does the water stay coloured after many dilutions? *Each crystal holds a huge number of tiny particles that spread into every glass.*
2. Why does the water level not rise much when sugar dissolves? *Sugar particles occupy the spaces between water particles.*

Takeaway

What looks continuous is actually made of tiny particles.

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