NCERT – GRADE 8 CHEAT SHEET

THE AMAZING WORLD OF SOLUTES, SOLVENTS, AND SOLUTIONS

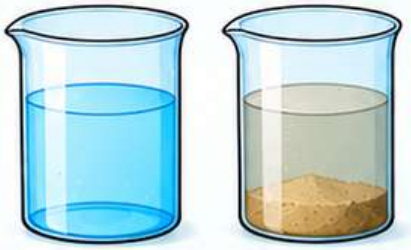
Explore, Mix, and Discover!

Pumpa

Based on NCERT (Curiosity) – Textbook of Science for Grade 8 | Chapter 9 | Reprint 2026–27 | Pages 134–151

1. MIXTURES

- Uniform mixtures have components evenly distributed.
- Example: Salt or sugar in water.
- Non-uniform mixtures do not have an even distribution.
- Example: Sand, chalk powder or sawdust in water.



Salt water (uniform mixture) | Sand in water (non-uniform mixture)

2. SOLUTE, SOLVENT & SOLUTION

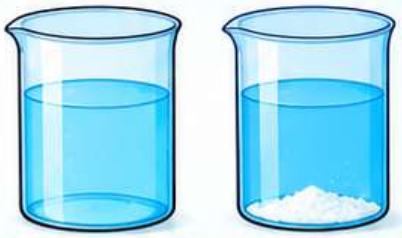
- Solute dissolves in solvent to form a solution.
- In solid + liquid solutions, solid is solute and liquid is solvent.
- In two liquids, smaller amount is solute and larger amount is solvent.



ORS or sugar syrup are common examples.

3. SATURATED & UNSATURATED

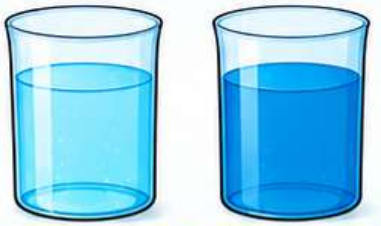
- An Unsaturated solution can dissolve more solute.
- A Saturated solution has reached its dissolving limit at a particular temperature and extra solute remains undissolved.



Unsaturated Solution (no residue) | Saturated Solution (residue)

4. CONCENTRATION & SOLUBILITY

- Concentration is the amount of solute in a fixed quantity of solution (or solvent).
- Dilute = less solute, Concentrated = more solute (relative terms).
- Solubility is the maximum amount of solute that dissolves in a fixed quantity of solvent at a given temperature.



Dilute Solution | Concentrated Solution

5. TEMPERATURE & GASES

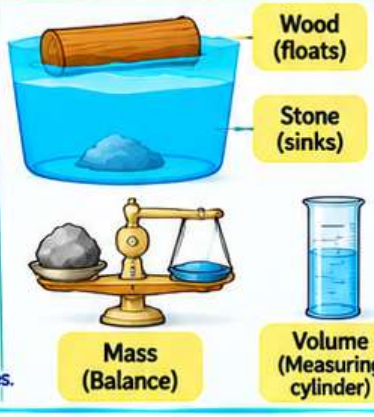
- Heating the water can dissolve more of the undissolved baking soda (as in the activity).
- Gas solubility in water generally decreases as temperature increases.
- Dissolved oxygen supports aquatic life, and warmer water holds less dissolved oxygen.



Hot water dissolves more solute

6. FLOATING, SINKING & DENSITY

- Density = mass ÷ volume.
- Objects less dense than water tend to float; denser objects tend to sink.
- Measure volume of an irregular solid by water displacement.
- Measure mass with a balance and volume with a measuring cylinder.
- Density generally decreases as temperature increases; pressure can affect density of gases.



Mass (Balance) | Volume (Measuring cylinder)

Quick Formulas

$$\text{Density} = \frac{\text{Mass}}{\text{Volume}}$$

Volume of irregular solid = final water level – initial water level

Quick Facts

- Same substance's density is characteristic at a given temperature.
- Oil floats on water because it is less dense.
- A solution is a uniform mixture.

Common Mistakes

- ✗ Do not confuse solute with solvent.
- ✗ Saturated does not mean no solvent remains.
- ✗ Floating/sinking depends on density, not simply mass or size.

KEY TAKEAWAY

Solutions are uniform mixtures; solubility tells how much dissolves, while density helps explain floating and sinking.

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