

Concentration and Dilution

Student Worksheet — g09_u09_w35

I can: calculate concentration and dilution and explain them with a particle model. Use safe colored-water/data cards only; sources in `sources.md`.

1. Define concentration.

2. State units for molarity.

3. Explain particle difference between 1.0 M and .50 M.

4. Calculate M for 2.00 mol in 1.00 L.

5. Calculate M for .500 mol in 250.0 mL.

6. Convert 750 mL to L.

7. Find mol in 2.00 L of .300 M.

8. Find volume for .600 mol at .200 M.

9. Define dilution.

10. Write dilution equation.

11. 1.00 M, 100 mL diluted to 250 mL: find M2.

12. .500 M, 50.0 mL diluted to 200 mL: find M2.

13. Find V2 for 25.0 mL 2.00 M diluted to .500 M.

14. Explain why dilution changes V but not solute mol.

15. Data A: colored-water intensity halves after volume doubles. Explain.

16. A student adds water and says solute particles disappeared. Critique.

17. Calculate mass concentration: 5.00 g in .250 L.

18. Compare .100 M in 1 L versus .100 M in 2 L: concentration and solute amount.

19. List one measurement limit for colored-water intensity.

20. Write a cautious conclusion for data showing volume doubled and intensity decreased.
