

## Core Skills Analysis

### Science (Chemistry)

- Ebony learned about solubility and the concept that certain factors influence how much solute can dissolve in a solvent.
- She identified key factors that affect solubility such as temperature, nature of the solvent, and pressure (if gases are involved).
- Ebony understood the relationship between temperature and solubility, likely recognizing that increasing temperature generally increases solubility for solids in liquids.
- She explored the interaction between solvent and solute types, acknowledging that chemical properties impact solubility outcomes.

### Tips

To deepen Ebony's understanding of solubility, consider designing simple experiments where she observes how temperature changes affect the dissolving rate of different solutes like salt and sugar in water. Introduce comparative investigations with different solvents such as oil or alcohol to explore solvent-solute compatibility. Incorporating real-world contexts, such as explaining why cold drinks are less sweet when chilled, can help relate concept to everyday life. Additionally, framing questions about gas solubility under varying pressures (for example, sodas) would broaden her grasp of how solubility factors vary by substance type.

### Book Recommendations

- [Chemistry for Beginners](#) by Chris Oxlade: An engaging introduction to basic chemistry concepts including solubility, designed for young learners.
- [The World of Chemistry: Magic in Solutions](#) by Kathy Alden: Explores solutions and solubility with experiments and real-life examples to capture student interest.
- [Science Experiments You Can Eat](#) by Vicki Cobb: Fun and edible experiments that demonstrate scientific principles including solubility and mixtures.

### Learning Standards

- KS3 Chemistry – Solubility and factors affecting it relate to NC Science Programme of Study for Years 7–9 (UK) under 'States of matter and mixtures' (NC Code: 5a, 5c)
- Understanding variable effects ties into scientific enquiry and investigation skills (NC Code: 1e, 1f)
- Explaining observations supports development of scientific vocabulary and reasoning outlined in KS3 science literacy goals

### Try This Next

- Worksheet: Chart different solutes and solvents with varying temperatures to record solubility observations.
- Writing prompt: Describe a real-life scenario where solubility plays a key role, explaining the factors involved.

### Growth Beyond Academics

Ebony's engagement with explaining solubility factors suggests growing scientific curiosity and critical thinking. The analytical nature of this activity fosters her confidence in breaking down complex concepts systematically while encouraging independence in her learning process.