

Core Skills Analysis

Chemistry

- Understanding the reaction between heat from the candle and the volatile compounds in the perfume.
- Exploring the concept of combustion and the role of oxygen in a contained environment.
- Analyzing the change in pressure when the glass cup is placed over the candle, leading to an explosive effect.
- Learning about the physical properties of fluids (water) and gases (perfume vapors) when interacting.

Physics

- Examining the principles of buoyancy with the glass tray holding water and the candle floating.
- Investigating the concepts of air pressure and the force exerted by the candle flame on the air within the glass cup.
- Understanding heat energy transfer from the candle to the air and liquid surrounding it.
- Exploring the idea of energy conversion as chemical energy from the candle transforms into thermal energy.

Art & Design

- Creating a visually striking display with the combination of light from the candle and the reflective surface of the water.
- Exploring the artistic aspects of scent through the incorporation of perfume into the experiment.
- Examining the impact of aesthetics in science experiments, enhancing engagement and curiosity.
- Learning about color, light, and form through the arrangement of the candle, water, and perfume.

Tips

Students can further explore the interaction of different perfumes with the candle flame and investigate variations such as using different types of candles or adding colored water for visual effects. Improving safety precautions during the experiment and documenting observations can enhance both the learning experience and the outcomes. They can also delve into the environmental impacts of using scented products in experiments.

Book Recommendations

- [The Chemistry of Everyday Things](#) by Amy J. D. Norris: This book explains the chemical reactions that occur around us, including insights into combustion and volatile compounds.
- [Physics of Everyday Phenomena](#) by William Thomas Silford: A detailed exploration of physical concepts demonstrated through everyday science experiments.
- [Art and Science in the Kitchen](#) by Mary Ellen J. Blanchard: This book combines art and scientific experiments demonstrating the beauty in everyday chemical processes.