

Science offers endless opportunities for discovery through simple, hands-on experiments. One captivating activity is growing salt crystals, which demonstrates solubility and crystal formation. By dissolving a large amount of salt in hot water and letting it cool, tiny crystals begin to form on a string suspended in the solution. Over time, these crystals grow into intricate geometric structures as the water evaporates, leaving behind solid salt formations.

Another intriguing experiment is the homemade compass, which explores Earth's magnetic field. By magnetizing a needle (by rubbing it against a strong magnet) and floating it on a small piece of cork in water, the needle aligns itself with the planet's magnetic poles, pointing north-south just like a real compass. This illustrates how magnetic fields influence objects and how early navigation tools worked.

For a lesson in biology and osmosis, the naked egg experiment is a great choice. By soaking a raw egg in vinegar for 24 hours, the acidic vinegar dissolves the calcium carbonate shell, leaving only the flexible membrane. If the egg is then placed in corn syrup, water moves out of the egg, causing it to shrivel, while placing it in water makes it swell as water re-enters. This shows how osmosis moves water across semi-permeable membranes.

A fun physics experiment involves sound waves using a spoon and string. Tying a spoon to the middle of a long piece of yarn and holding the ends to your ears while tapping the spoon creates a surprising bell-like sound. The vibrations travel more efficiently through the string than through air, amplifying the sound and demonstrating how different materials transmit waves.

Lastly, the balloon rocket experiment is an exciting way to learn about Newton's Third Law of Motion. By threading a string through a straw, tying it between two points, and taping an inflated

balloon to the straw, releasing the air propels the balloon forward. This happens because the escaping air pushes backward, forcing the balloon forward an example of action and reaction forces.