



Name: _____

Date: _____

The Science of Vinegar

While listening to the video, fill in the following blanks with these options:

White 2.5 cell disinfects sour sick vinegar

First off, let's break down what vinegar actually is. Vinegar is a _____ liquid made from fermenting alcohol with acetic acid bacteria. This process transforms the alcohol into acetic acid, which is the key ingredient in vinegar. Distilled vinegar, also known as _____ vinegar, is made by fermenting grain alcohol. It's called "distilled" because it's been purified to remove impurities, making it a clear, strong, and versatile liquid.

Now, why does vinegar have such a strong smell and taste? That's because of the _____ acid. This acid is what gives vinegar its powerful cleaning and disinfecting properties. Acetic acid has a pH level of around _____, which makes it acidic. This acidity is what helps vinegar break down dirt, grease, and grime, making it a fantastic natural cleaner.

But vinegar does more than just clean. It also _____! When we say something is a disinfectant, we mean it can kill bacteria and other microorganisms that might be harmful. So how does vinegar do this? Let's dive into the science!

Bacteria and other microorganisms have _____ membranes that keep their insides protected. The acetic acid in vinegar can penetrate these cell membranes and disrupt the internal structures of the bacteria. It's kind of like popping a water balloon – once the membrane is breached, the bacteria can't survive. This makes vinegar an effective tool for killing off many types of bacteria.

Vinegar is especially good at killing off certain types of harmful bacteria, like E. coli and Salmonella. These bacteria can cause food poisoning, so using vinegar to clean kitchen surfaces, cutting boards, and even fruits and vegetables can help keep you safe from getting _____.

You might be wondering, is vinegar safe to use around the house? Absolutely! Unlike some harsh chemical cleaners, vinegar is non-toxic and safe for the environment. It's a great choice if you want to clean your home without using harmful chemicals. Plus, it's much cheaper than many store-bought cleaners!

Here's a fun fact: _____ has been used for thousands of years! The ancient Babylonians used vinegar as a cleaning agent. Even the famous nurse Florence Nightingale used vinegar to disinfect hospital rooms in the 1800's. So, when you use vinegar to clean, you're part of a long history of people harnessing the power of this amazing liquid.

To sum it all up, distilled vinegar is a natural disinfectant because of its acetic acid content. This acid can break down the cell membranes of bacteria, killing them effectively. It's safe, environmentally friendly, and has been trusted for centuries. So next time you see a bottle of vinegar in your kitchen, remember the science and history behind this incredible liquid. And maybe give it a try next time you need to clean something!