

Scrub-a- dub- dub

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Wash behind those ears!!! This phrase sure takes me back...my mother nagging, holding me down, “attacking” me with a well lathered bar of soap! I recall wondering if that soapy bar really cleaned me anyway, after all, isn’t water good enough? Obviously my mother knew what she was doing, as there is a real science behind how soap cleans our skin!

In order to fully understand the science of soap you will need a quick molecular chemistry lesson. Not to fear this will be simple. A molecule is comprised of two or more similar atoms held together by an electrical force; wow, that’s a mouth full! Think of it this way, a molecule is a house, inside that house are many rooms and all the rooms are held together by a foundation. If you had many houses come together you would have a community. Well you see, a bar of soap is kind of like a community, it’s comprised of many, many molecules. Almost everything you can think of is composed of molecules, including oil and grease which can stick to your skin.

When you get dirt on your hands you can usually wash most of it off without the aid of soap. The reason for this is because most of the dirt is water soluble; meaning the dirt molecules and the water molecules will mix together and easily slide off your hands. Grease and oil molecules function slightly differently, as they will stick to your skin and regardless of the amount of water applied they will not come off.

Soap molecules have a unique chemical structure which makes them highly attracted to grease and oil molecules. Once the soap has attached to the grease and oil, a water molecule will then attach to the soap, creating a chain, which allows all three to be rinsed off. Soap molecules are also highly attracted to water molecules. The soap in essence acts like a “connector” joining the oil/grease with water, therefore, allowing all three molecules to be washed away.

The problem with soap is that sometimes the above process can be too harsh and some of the skin’s natural oils are removed. These oils are necessary to keep the skin soft and supple. Skin lacking natural oils will become dry and chapped. Most manufacturers of soap now include supplementary oils to reduce the risk of dry skin. However, some skin types are prone to the overproduction of natural oils, referred to as “oily skin”, in which case regular soaps are of little value. Those with oily skin require the aid of special cleansing products that are more long acting than regular soap.

This is one example of how the science behind some of the everyday things we come upon can be fascinating. Have a look around and consider the complexities surrounding us and indulge your curiosity; you never know what you may discover!

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