WM Barbara Spencer
WP Joe Spencer

MAY 2023 WEEKLY READER #4 -===- - VOL.5 ISSUE. 21

May Birthdays
26 – Margaret Schooling
29 - Pauline Hornsten
30 – Evan Kirkpatrick
31 – Betty Kinton

TMRC Daylight Chapter #1145
June 1 – Memorial service for Laverne Whitfield in the Chapel 2pm
June 3 – Installation 1:30pm MPR
June 26 – Stated Meeting 1:30 pm

Soap is a compound of a fatty acid used in a variety of cleansing and lubricating products. Domestically soaps are surfactants usually used for washing, bathing, and other types of housekeeping.
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Soap has two main mechanisms of action, both of which come from it being a surfactant, which comes from the words "surface active agent." Surfactants have the unusual ability to bind to both oil and water, which is the first and most important mechanism of action. You have heard the phrase "they get along about as well as oil and water". This is why you always have to shake up salad dressing before you pour it because it always separates into two layers? That is because oil molecules and water molecules don't like to mix! When you wash with plain water, you are not getting all the oily goop off your body. That's where soap comes in.

So how does soap make water wetter? The "wetness" of a liquid is how much it covers something, or spreads on a surface. Liquids spread because of gravity, and want to ball up at the same time because they like wetting themselves. Soap goes to the surface of water, reducing how much it wants to ball up, and making it easier to spread. It weakens the water.
(more pg 2)

Grab a pencil and piece of paper. How many words can you make using the letters in "**Soap on a Rope**" We found **56!**

May:
flower: Lily of the Valley
Birthstone: emerald
Zodiac Signs: **Taurus (April 20 - May 20) - Gemini (May 21 - June 20)**

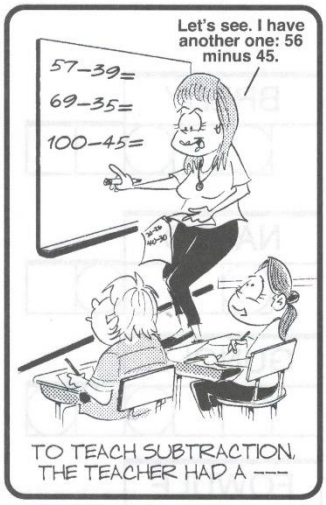
Unscramble these four Jumbles, one letter to each square, to form four ordinary words.

SOLPI

NALST

BAVEHE

CANYLU



Now arrange the circled letters to form the surprise answer, as suggested by the above cartoon.

Print answer here " " " "

SOAP AND SHAMPOO

K	S	O	F	T	S	O	A	P	M	S	S	C	U
H	A	B	O	D	Y	W	A	S	H	H	H	A	S
I	R	I	S	H	S	P	R	I	N	G	A	R	A
J	Z	T	P	B	F	T	I	E	H	S	M	E	F
Q	S	T	H	A	A	O	H	V	H	U	P	S	E
V	O	T	G	H	N	R	U	S	O	P	O	S	G
O	C	L	Z	E	S	T	S	F	Y	R	O	O	U
S	E	N	A	Q	G	R	E	O	M	Z	Y	W	A
U	T	Z	V	Y	X	A	I	N	A	F	D	N	R
A	A	D	Y	H	T	N	R	O	E	P	I	C	D
V	P	W	U	D	O	V	E	N	I	U	A	W	C
E	H	W	A	B	L	S	D	S	I	J	L	D	P
E	I	V	R	F	C	O	A	S	T	E	W	T	T
D	L	X	S	K	Z	U	I	I	D	J	R	N	E

IRISHSPRING
SUAVE
PANTENE
IVORY
GARNIER
OLAY
CETAPHIL
DIAL
ZEST
COAST
SOFTSOAP
CARESS
SAFEGUARD
BARSOAP
BODYWASH

(Soap cont'd)
In more advanced terms, water likes to ball up because of surface tension, which makes the surface of liquids act like a little elastic trampoline, and that is the same force that lets bugs walk on water. The soap changes the bonds on the water surface, reducing this elastic force. You can do an experiment: you can float a paperclip on a cup of water if you place it down gently, but if you then add a drop of soap to the water, the paperclip will sink through the surface.
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Most substances either dissolve in water or they dissolve in oil. Soap does both. This is because on a soap molecule, one end is water-soluble and the other is oil-soluble.
soap dissolves into both water and oil.
Soap is made by an efficient one-step chemical reaction: Two inputs. Input 1: an animal or plant fat. Input 2: a strong alkali

An animal or plant fat can be tallow (rendered beef fat), lanolin (rendered sheep fat), olive oil, coconut oil, palm oil, palm kernel oil, avocado oil…etc.
The strong alkali is usually sodium hydroxide – aka lye, aka NaOH – or potassium hydroxide – aka KOH. The former produces solid bar soap. The latter produces liquid soap.

Soap in action: surfactant & emulsifier
Water is an exclusive substance it has a "high surface tension".

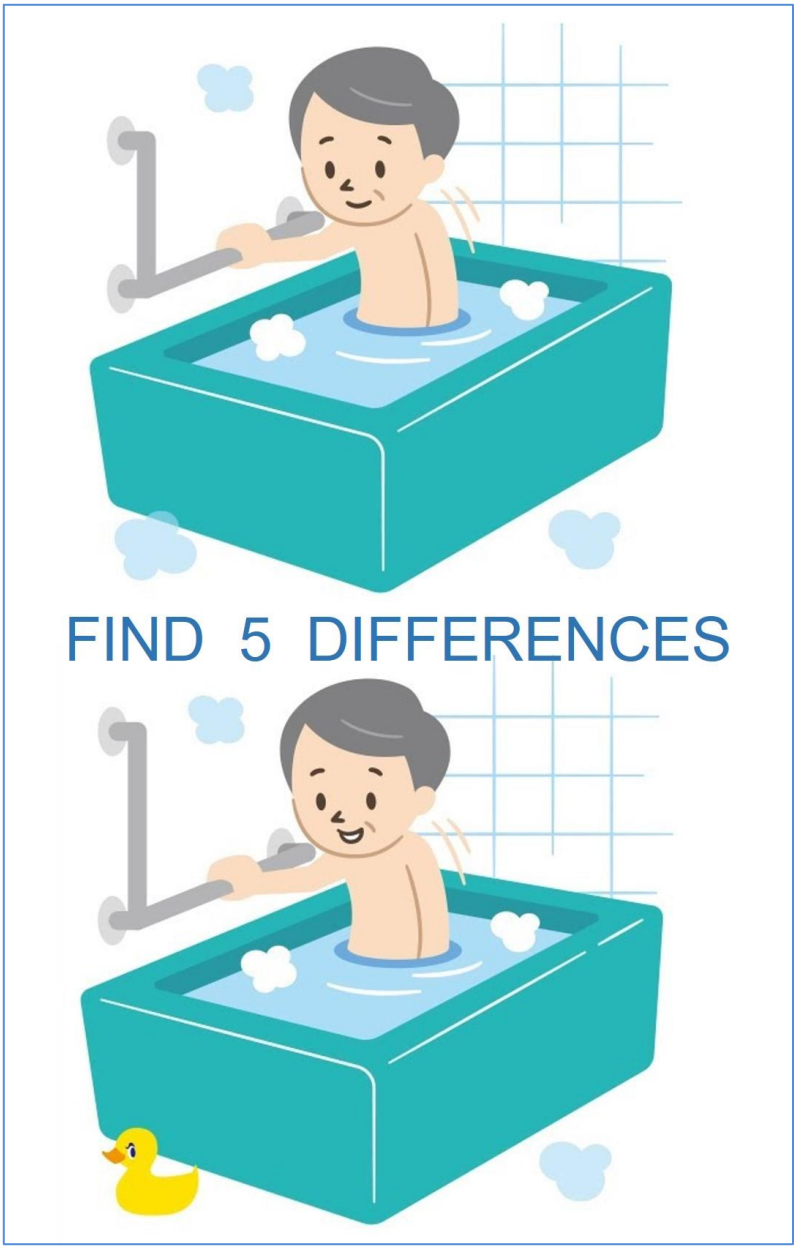
Surface tension is the cohesive force a liquid has between molecules of its kind. With water, surface tension is pretty high, so much so that it somewhat resembles an elastic membrane. Surface tension is why water beads up on a glass surface, how some bugs can walk on water, and why belly flops are so very painful.

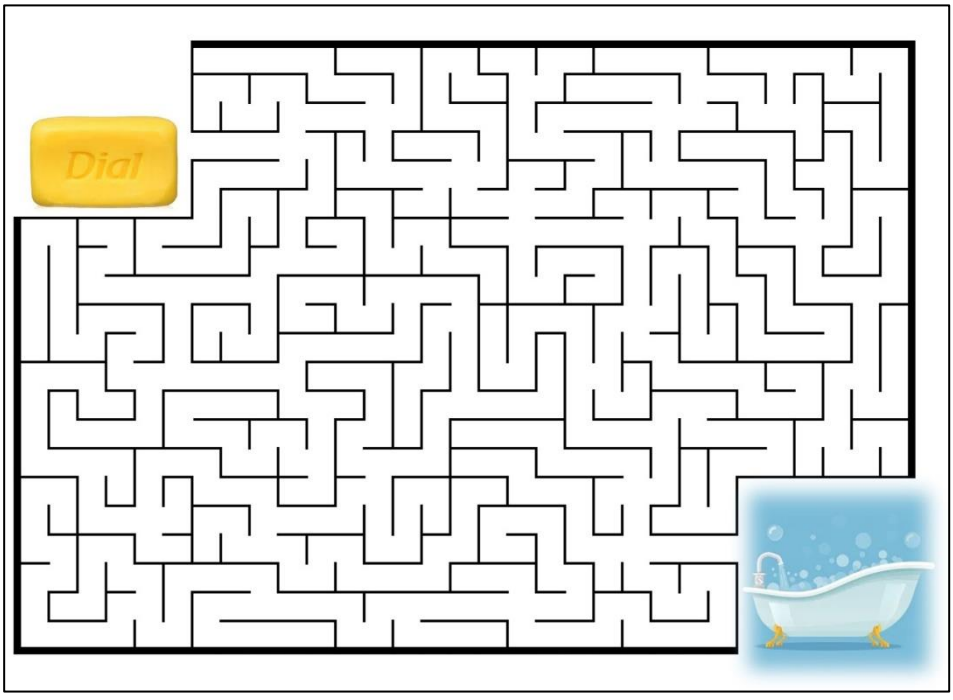
Water's surface tension also makes it skim over surfaces instead of penetrating down into them. Pure water doesn't make things totally wet.

Soap breaks this surface tension of water, forcing the water molecules to let go of each other and effect other things like fibers and pores and other microscopic crevices in surfaces that need to be cleaned. Soap makes water wetter.

When soap breaks the surface tension of water, it allows the water to penetrate more fully down to the surfaces that need to be cleaned, whether it's a fabric, a counter, hair, or your skin.

(more pg 3)





Jumble answers: SPOIL, SLANT, BEHAVE, LUNACY
LESSEN PLAN
~~~~~~

(Soap cont'd)
Soap's ability to bond oil and water has a scientific name: emulsifying. So soap is an emulsifier. But it doesn't do this emulsifying on a one-to-one, one soap molecule for every oil molecule basis. Instead, it acts in large groups.
A whole bunch of soap molecules – around 60 – will surround each bit of oil, forming a sphere around it, tucking the oil away safely in the middle. ***This little oil/soap nugget is called a micelle***. It takes some time and jostling for soap to get itself situated in this way, which is why there's the recommendation for 20 seconds of handwashing.

The surface of the fully formed micelle consists solely of those water-loving soap ends, which is all the surrounding water senses. The water has no idea that its arch-enemy oil is hiding inside. As the water passes by, it picks up those micelles and carries them away. This is how soap cleans.
But it's not only oils that are a concern. A bigger concern is germs – bacteria, viruses, and such. Happily for us, germs are coated in a lipid layer. (lipid means fat) So as far as the soap can sense, bacteria and viruses are oil. Soap attaches to them the same way it would to a bit of olive oil. Its oil-soluble end dissolves right into that lipid layer, tucking it into a micelle, and swishing it away. Good-bye, germs.

In Summary:
Soap is a surfactant and an emulsifier.
Soap works primarily by removing, not by killing, though some germs are killed in this process.
Soap needs some time and action to get itself situated in all those tidy micelle clusters. Thus, the recommended 20 seconds for handwashing.
Soap needs to be rinsed with water. It does not work waterlessly.
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When used for cleaning, soap solubilizes particles and grime, which can then be separated from the article being cleaned. In hand washing, as a surfactant, when lathered with a little water, soap kills microorganisms by disorganizing their membrane lipid bilayer and denaturing their proteins. It also emulsifies oils, enabling them to be carried away by running water.

Soap is created by mixing fats and oils with a base.

Humans have used soap for millennia. Evidence exists for the production of soap-like materials in ancient Babylon around 2800 BC.

I am thankful for laughter — that element of surprise; the way it shakes me free from the weight of my circumstances and lets me see with fresh eyes. Whether it's laughter from sudden awareness, overflowing joy, or tired silliness — I am always left the better for its coming

Please Contact the Worthy Matron
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tmrc.daylight1145@gmail.com **if you have a change of phone number or address**.

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