



FOAMY SOAP FUN

*AN ACTIVITY TO EXPLORE
THE SCIENCE OF SOAP
AND HAND WASHING*



WE ENGAGE 4 HEALTH IS FUNDED BY A GRANT FROM THE NATIONAL
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Hey, Mom! That experiment we did with cinnamon and oil was really fun!

Now we know that soap, water, and rubbing hands for 20 seconds are all super important...

To wash off coronavirus and other pesky germs!





I'm remembering something else cool about soap! I saw this on a school trip to the MUSEUM.

We put drops of food color on shaving cream and made marbled prints on paper. Want me to show you?



Shaving cream actually IS soap... just made into a foam!

Sure, but what does this have to do with soap?

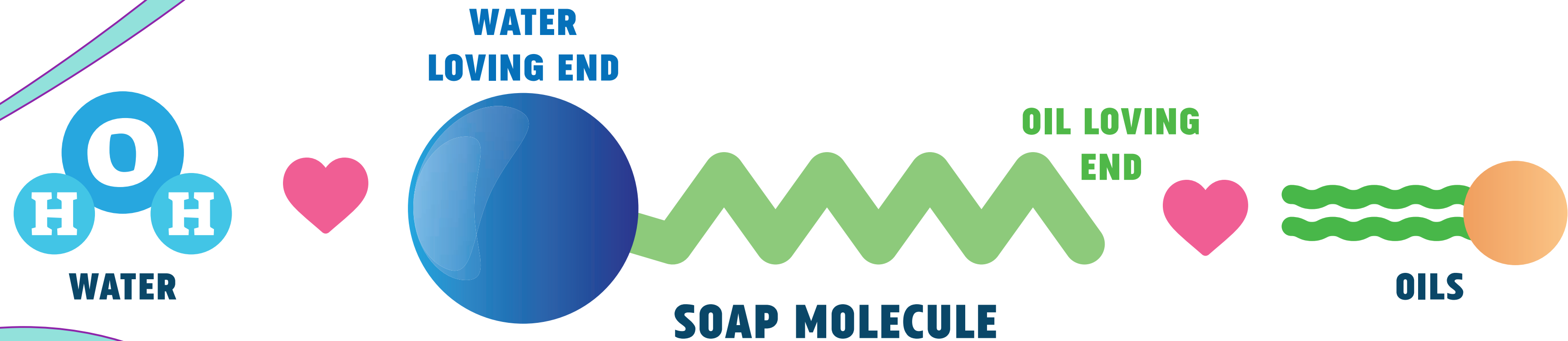


OK, let's drop
some food color on a
blob of shaving
cream.

Swirling the
food color around
makes a marbled
pattern.



Remember we found out that soap molecules are water loving on one end and oil loving on the other end?



The water loving part of the shaving cream likes the food color.

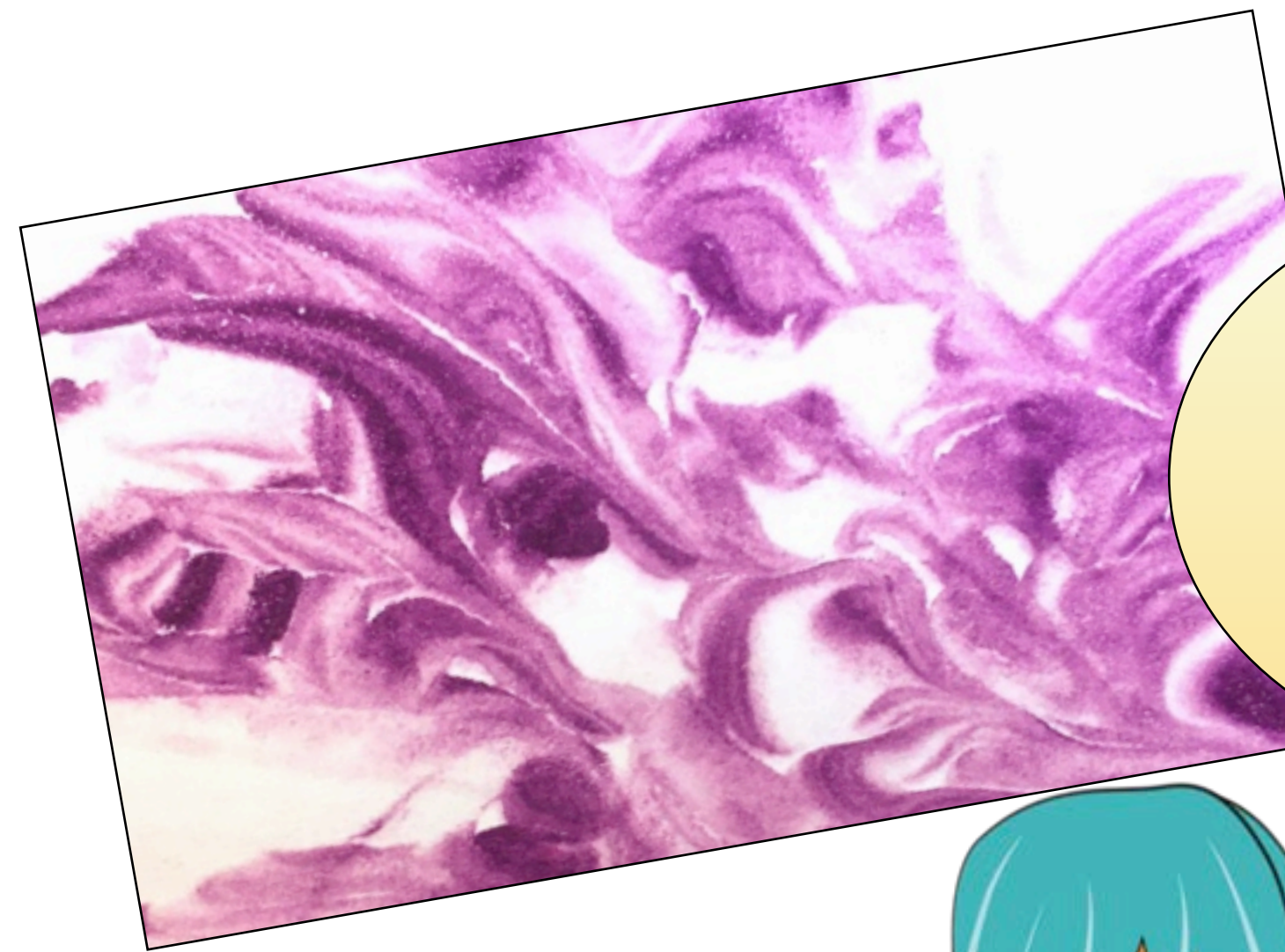
The oil loving part of the shaving cream does not like the food color.

So, the color doesn't mix in fast. That's why we can make nice swirls.

We can put a piece of paper on the marble pattern and lift it off.

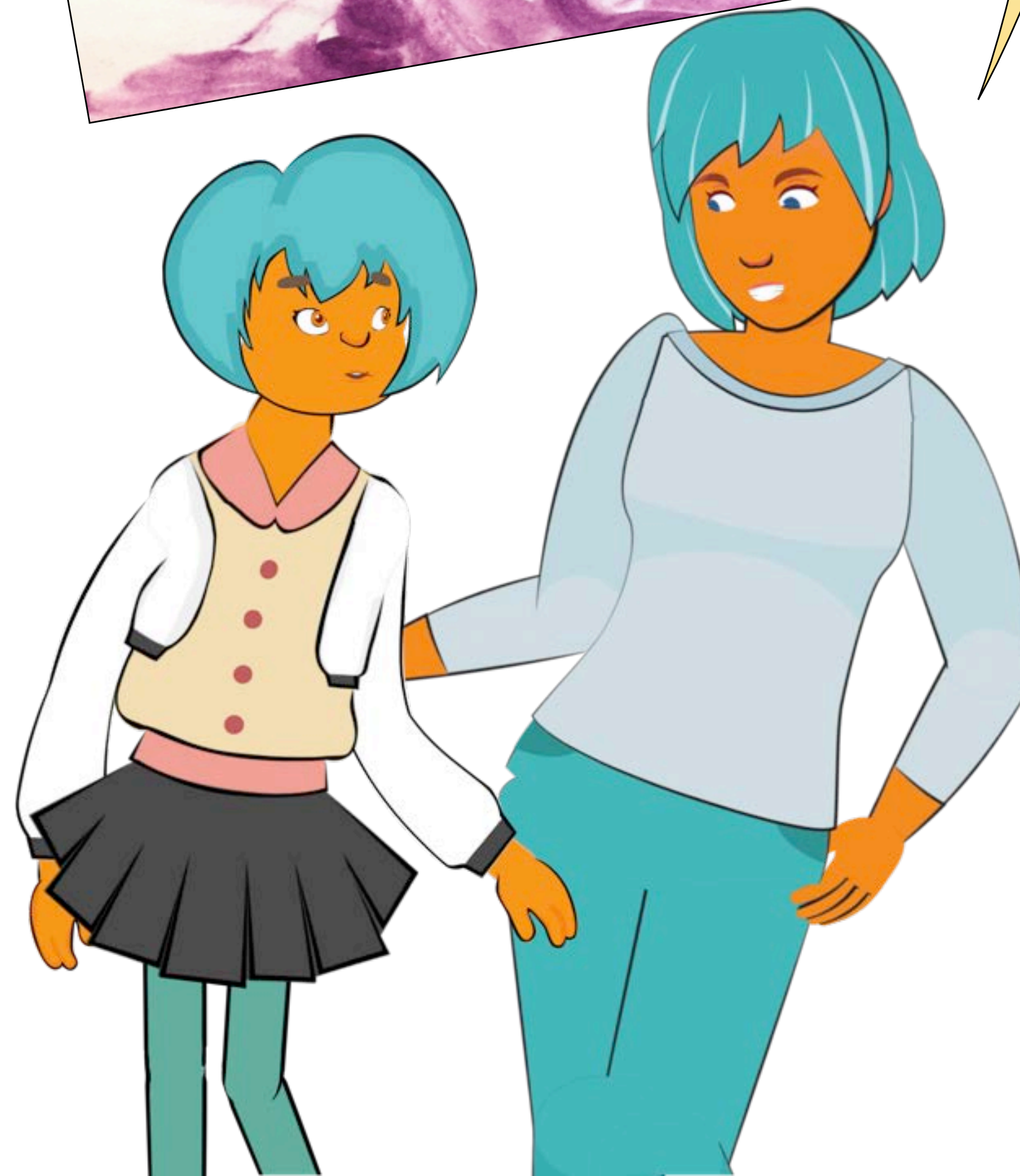


Scrape the shaving cream off the paper and you see the marble pattern!



That is so pretty!

I wonder if other kinds of color, like paints, would work the same way?





Maybe we can try that! But I want to show you something else first...

We need to mix the food color into the shaving cream as evenly as we can.



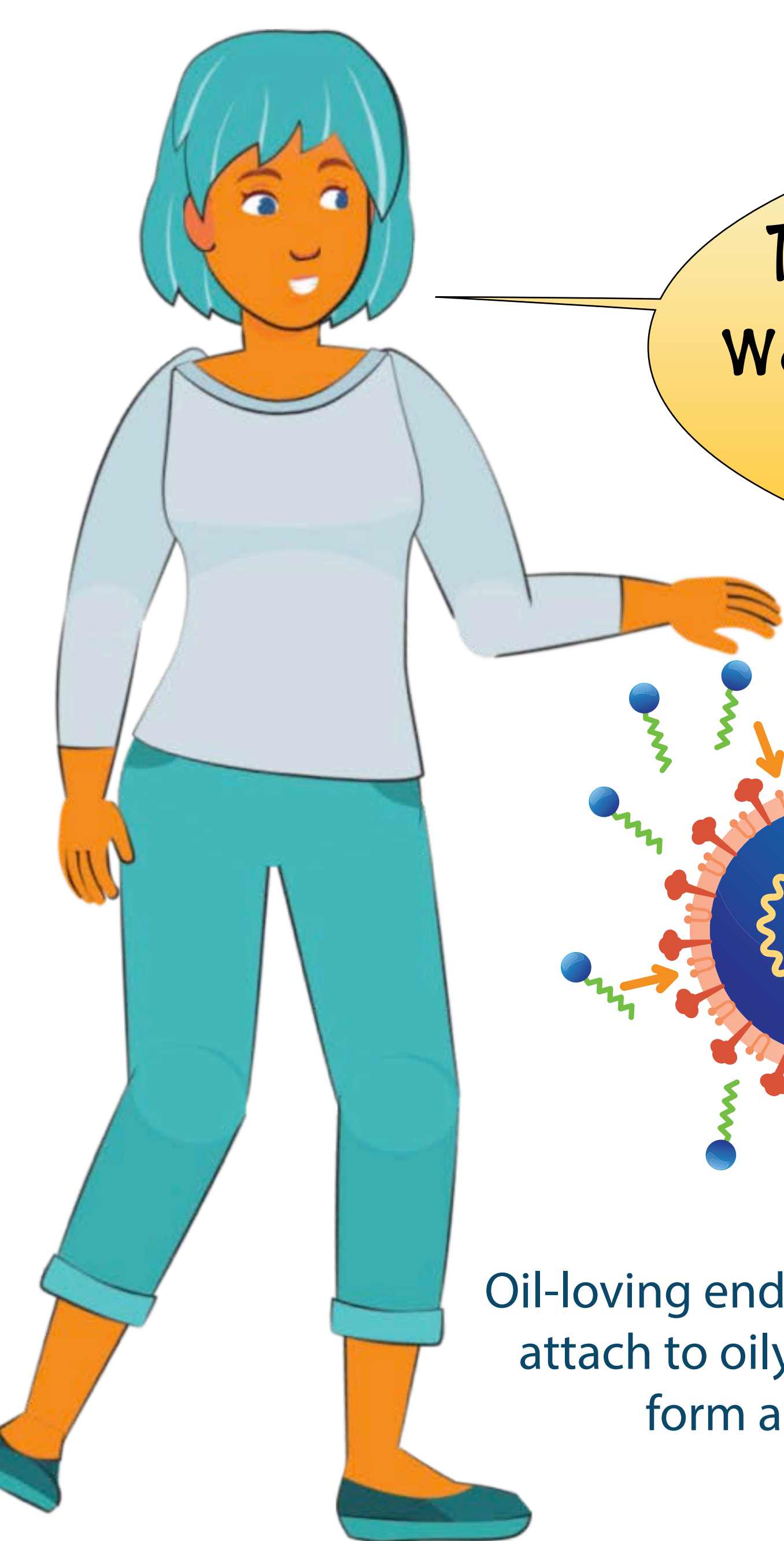


Now, we drop
water on the colored
shaving cream.

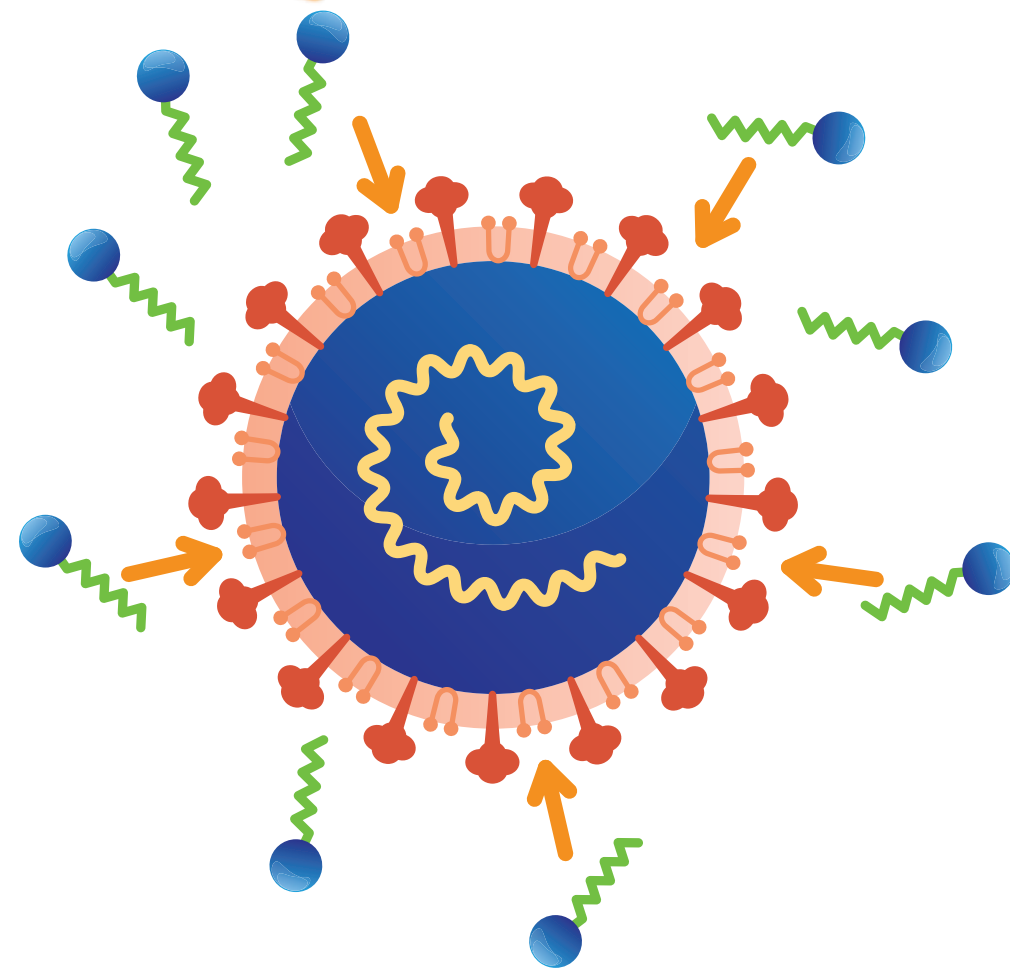
Wow! The shaving
cream is instantly white
where the water
dropped!

It looks like the
water pushes the color
away and makes a clean
surface.

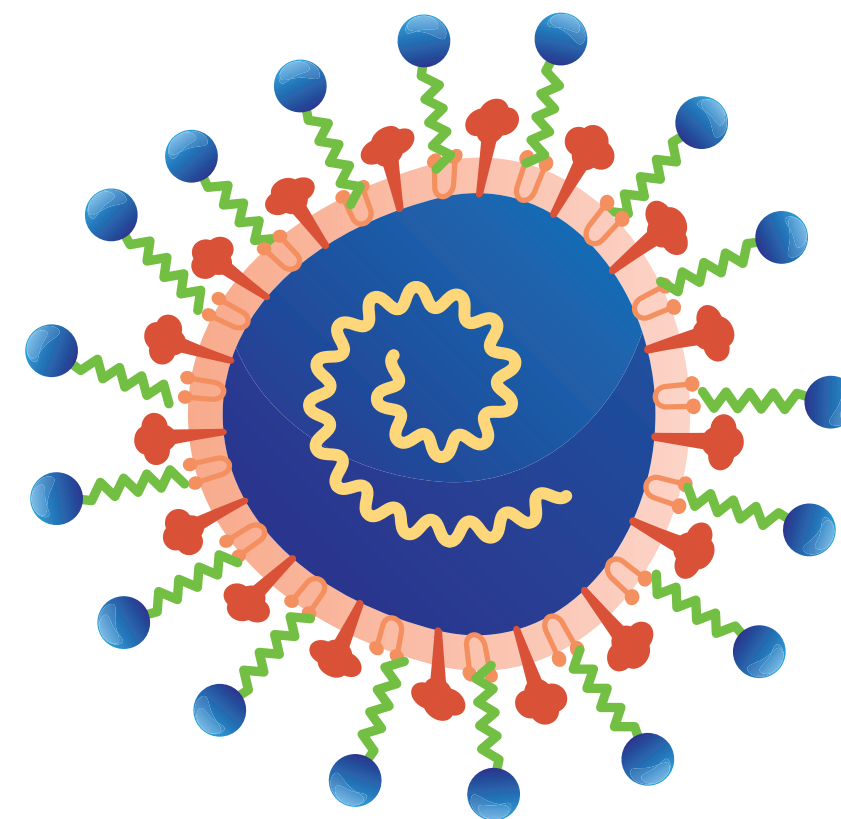




The food color washing away is like
water rinsing away viruses after we
get them soaped up!



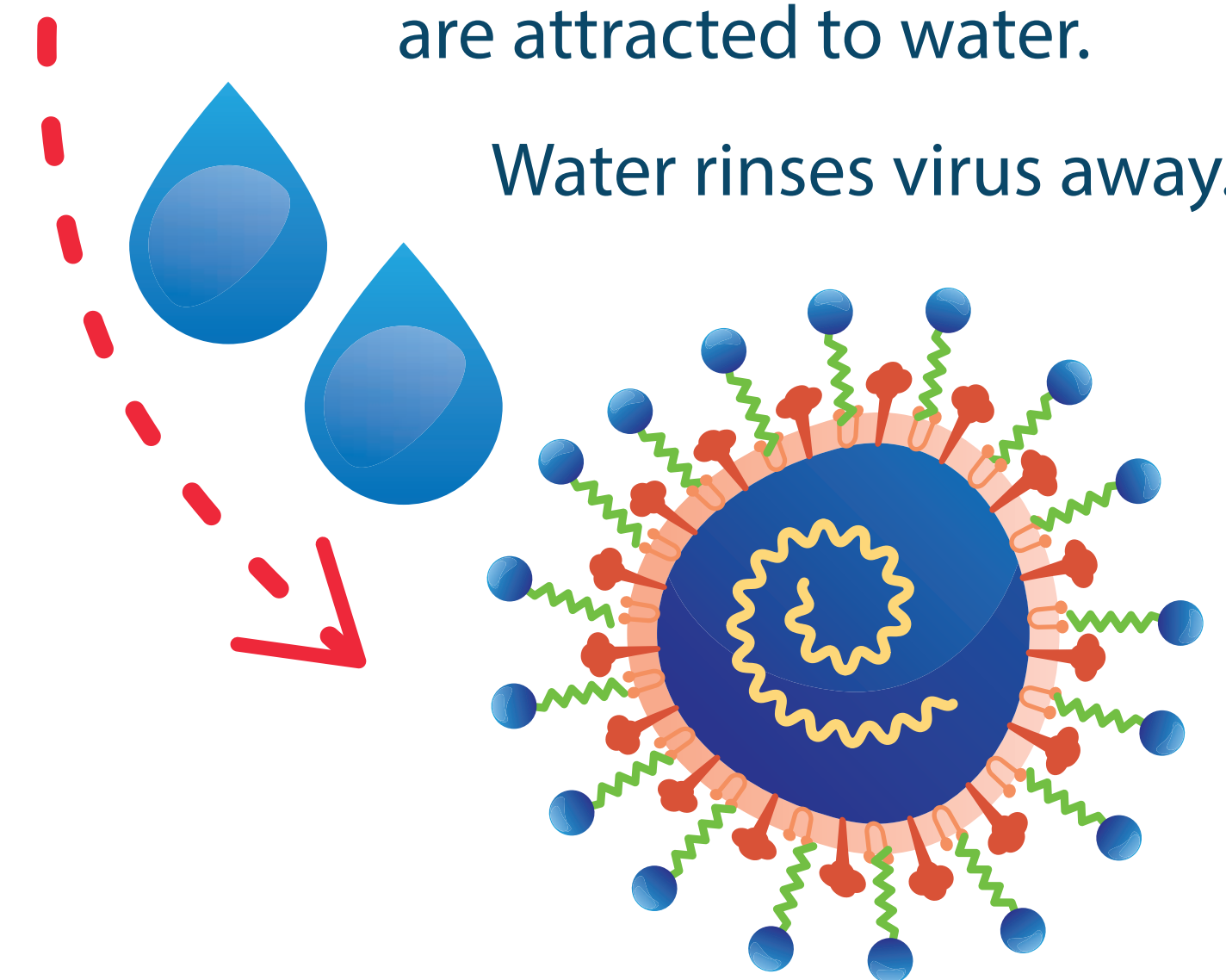
Oil-loving ends of soap molecules
attach to oily layer of virus and
form a soapy layer.



Soapy layer around virus
+ rubbing hands together
unsticks virus from skin.

Water-loving ends of soap molecules
are attracted to water.

Water rinses virus away.



I'm still a bit confused about shaving cream being soap. It looks like foam...

I'll show you something. We did this at the MUSEUM too.

I'll use a paintbrush to whip air into liquid soap and food color.

Let's drop water on this lather I made... See! It gets a clean spot just like the shaving cream did!

LATHER MEANS FOAMY SOAP!

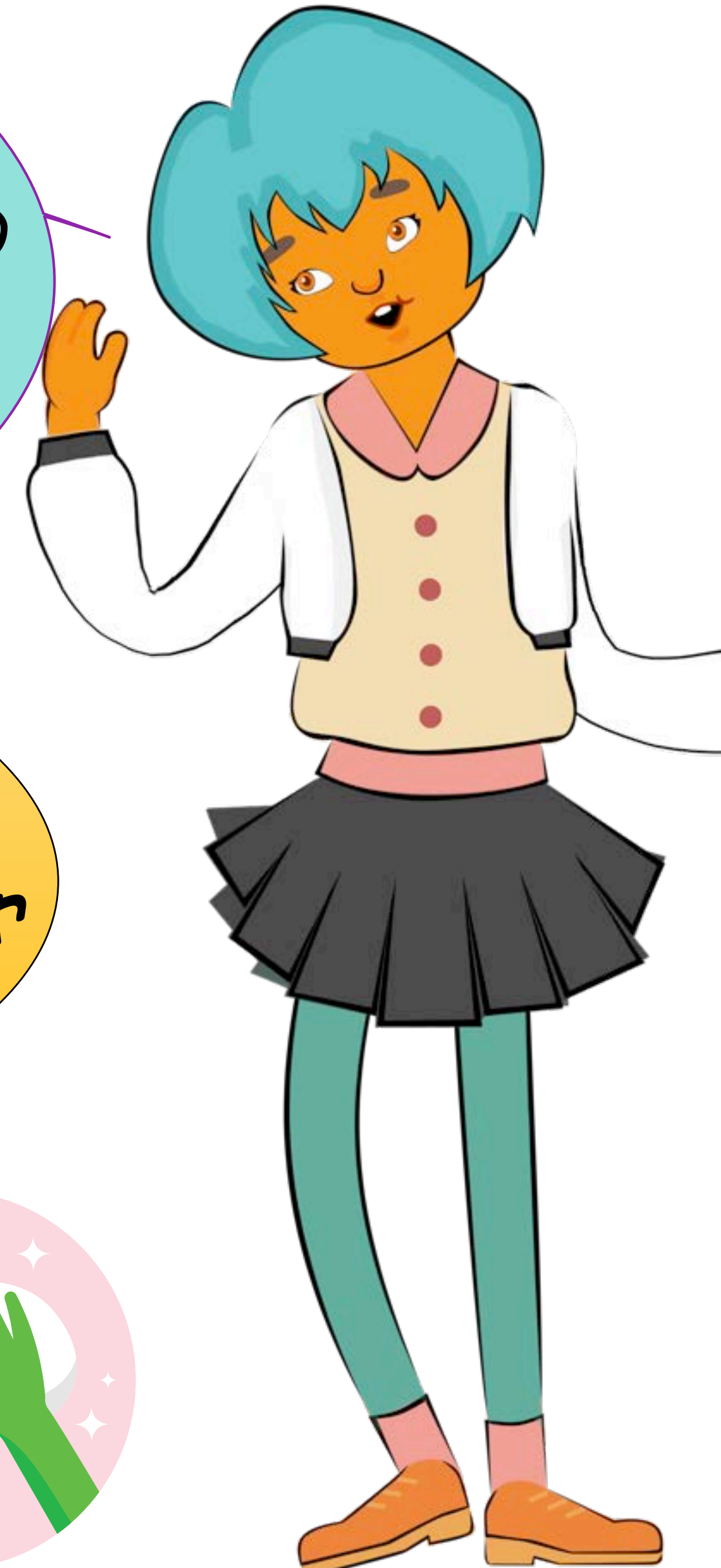





Oh! Sort of
like how you make
lather when you rub
your hands together
with soap and
water.

You're right! Rubbing
hands together adds air to
the soap and water and
makes lather.

So the 20 second
hand washing rule gives
enough time to make the lather
and rub it around!





We had so much fun
making marbled prints with
shaving cream!

We hope you'll try making
prints yourself! Maybe you'll
have some new ideas about
things to try!



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