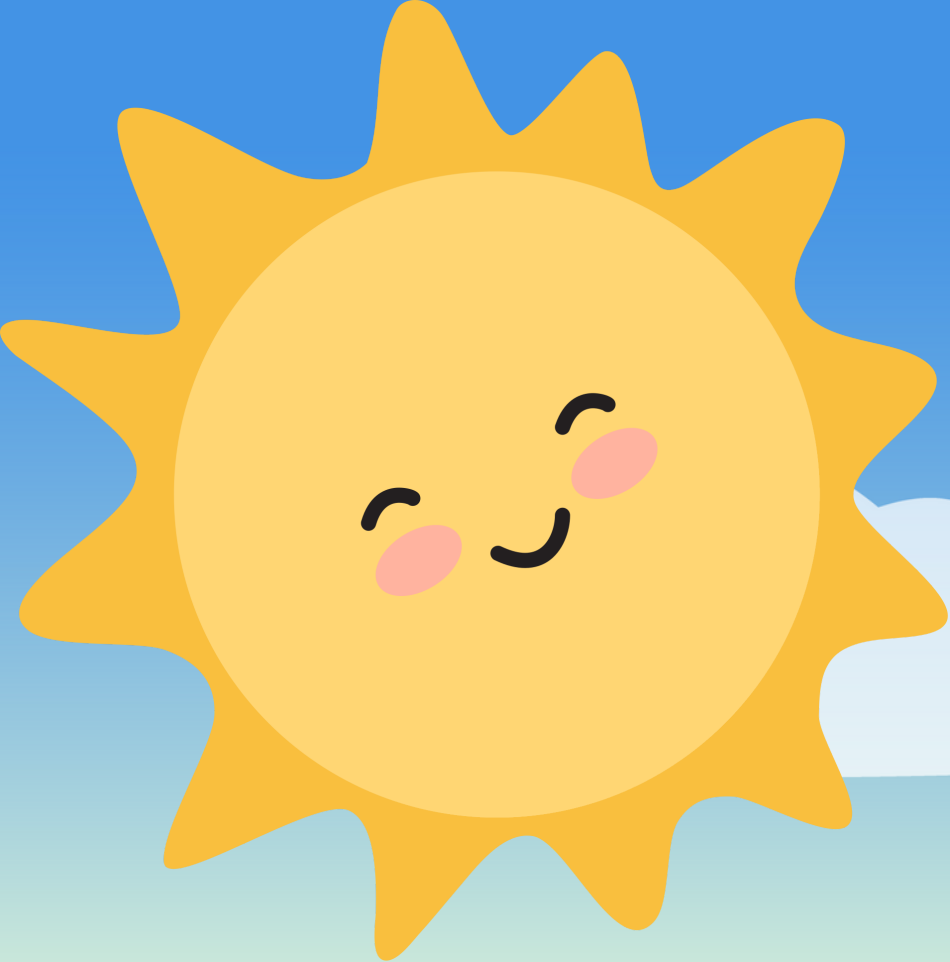
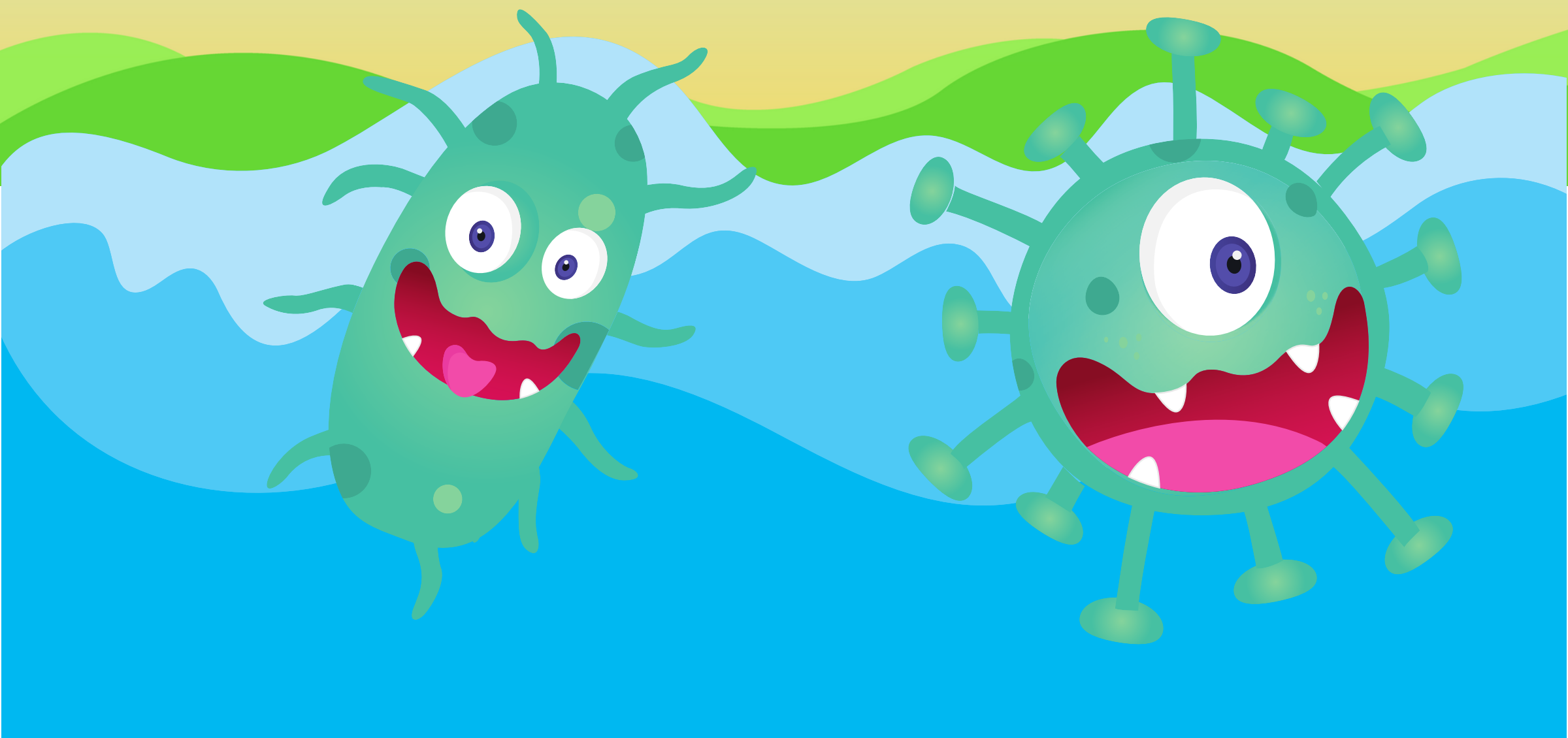




EXPLAINED FOR KIDS
BY TOBIAS STEUBE

ULTRAFILTRATION





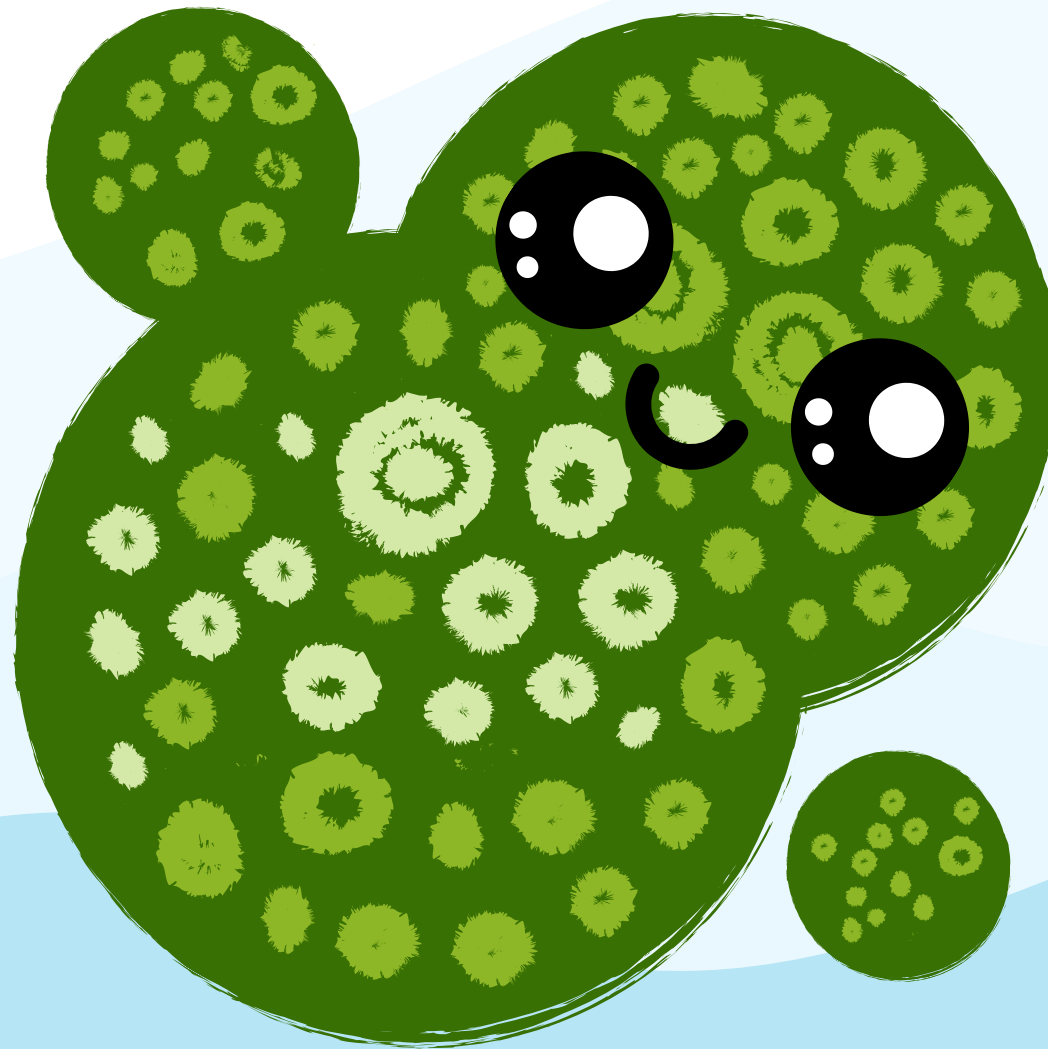
**HAVE YOU EVER LOOKED AT WATER UNDER
THE MICROSCOPE?**



NO? THERE IS A LOT TO SEE!



**SAND, SMALL CRITTERS AND BACTERIA CAN CAN
BE FOUND IN THE WATER. WHEN IT GETS
WARMER, YOU CAN EVEN FIND A LOT OF
WATER FLOWERS - WE CALL THEM ALGAE.**



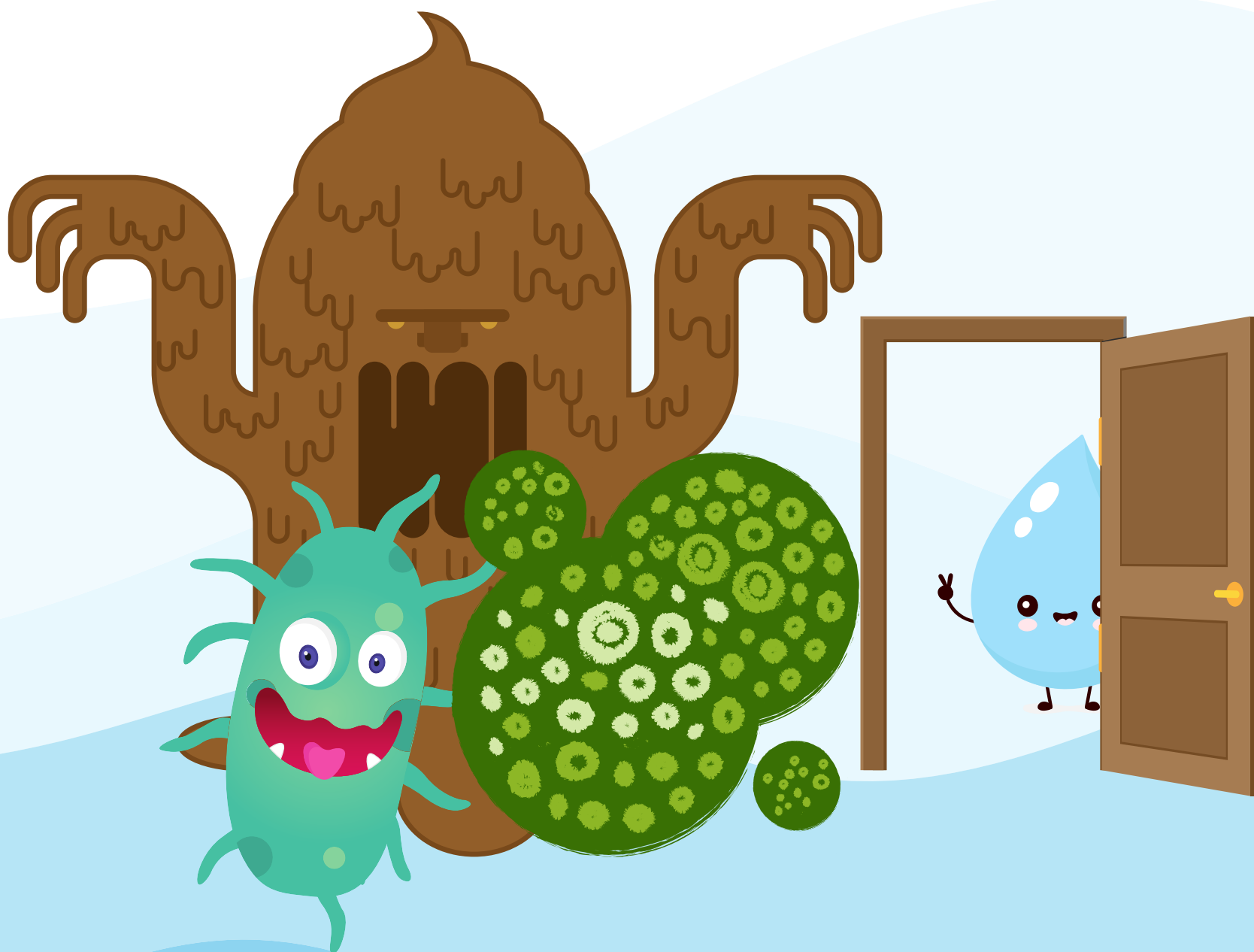
**ALGAE ARE FOOD FOR MANY WATER ANIMALS
BUT SOME ALGAE MAKE THE WATER STINK
TERRIBLY OR EVEN TOXIC.**



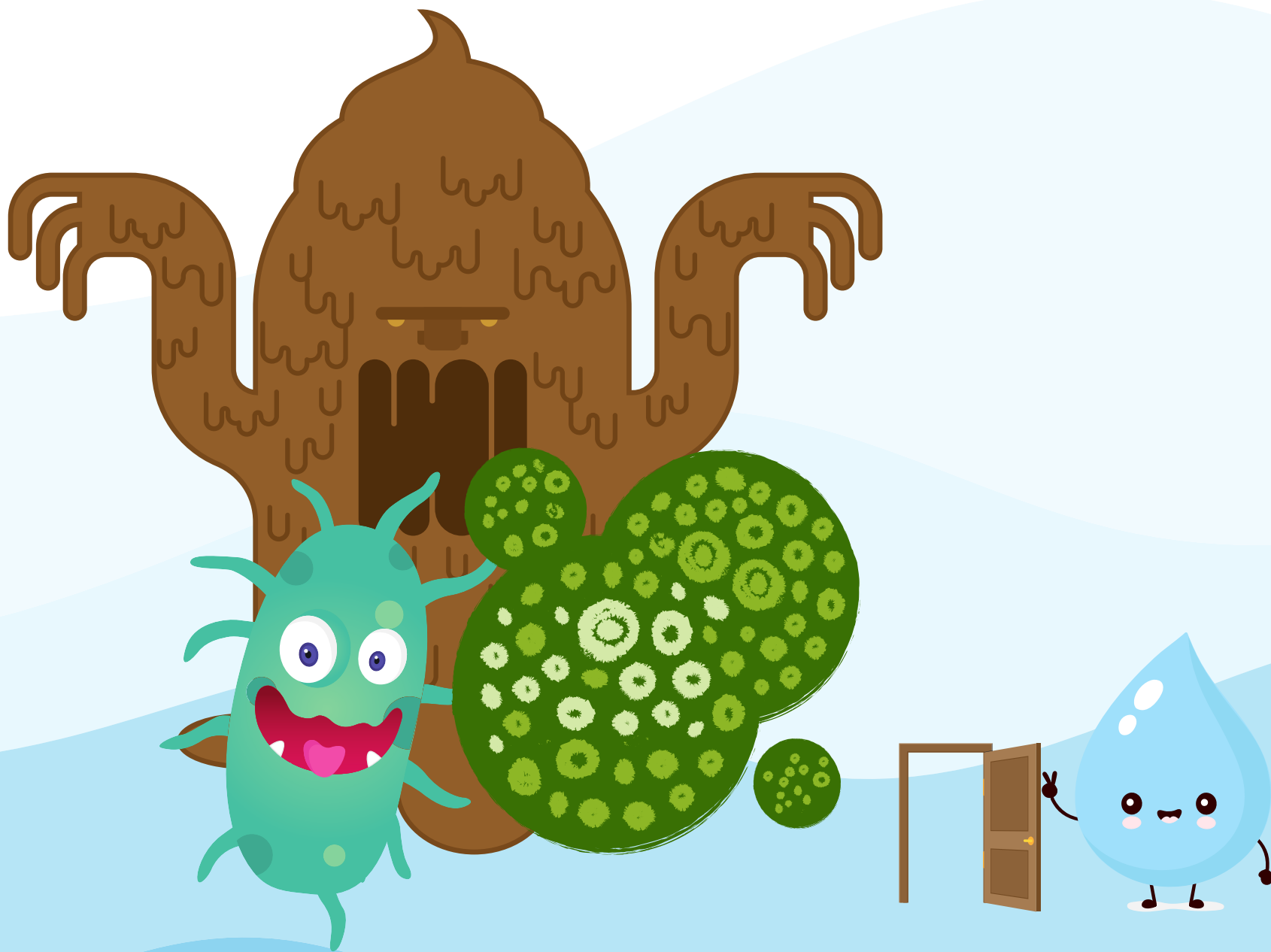
**YIKES! NO ONE WANTS TO DRINK STINKY,
TOXIC WATER, RIGHT? BUT HOW IS ALL THE
YUCKY STUFF REMOVED FROM THE WATER?**



**MOST OF THE STINKY STUFF SWIMS IN THE
WATER, SO WE NEED A VERY TIGHT FILTER TO
REMOVE IT.**



**THE FILTER IS LIKE A DOOR AND EVERYTHING
TOO TALL OR TOO BIG DOESN'T FIT THROUGH
THE DOOR.**



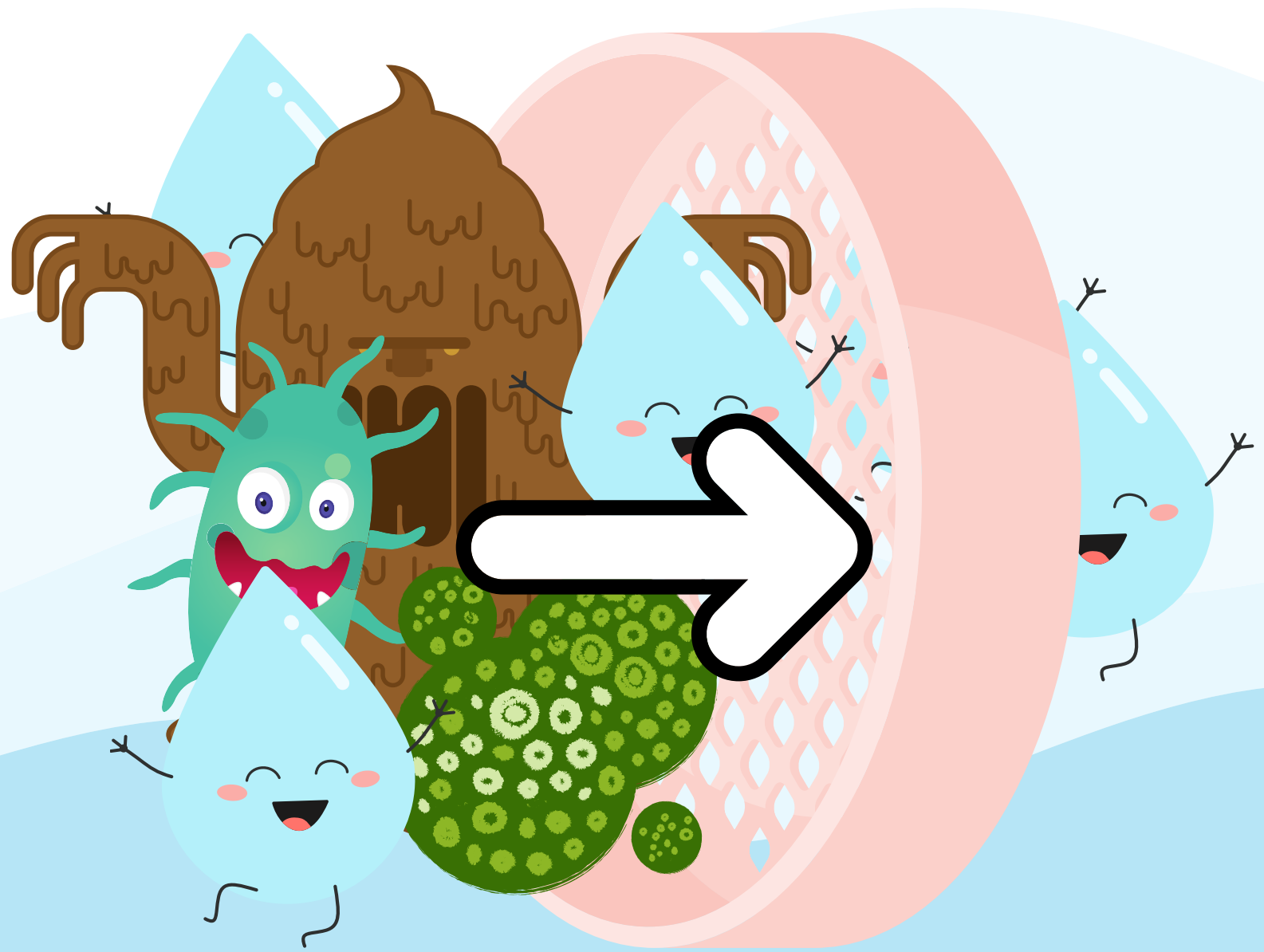
OUR FILTER IS LIKE A VERY, VERY TINY DOOR. ALL THE YUCKY STUFF THAT SWIMS IN THE WATER DOESN'T FIT THROUGH THAT DOOR. ONLY WATER CAN SQUEEZE THROUGH IT. AND BECAUSE THAT FILTER IS SOOOO ULTRA TIGHT, WE CALL IT ULTRAFILTER.



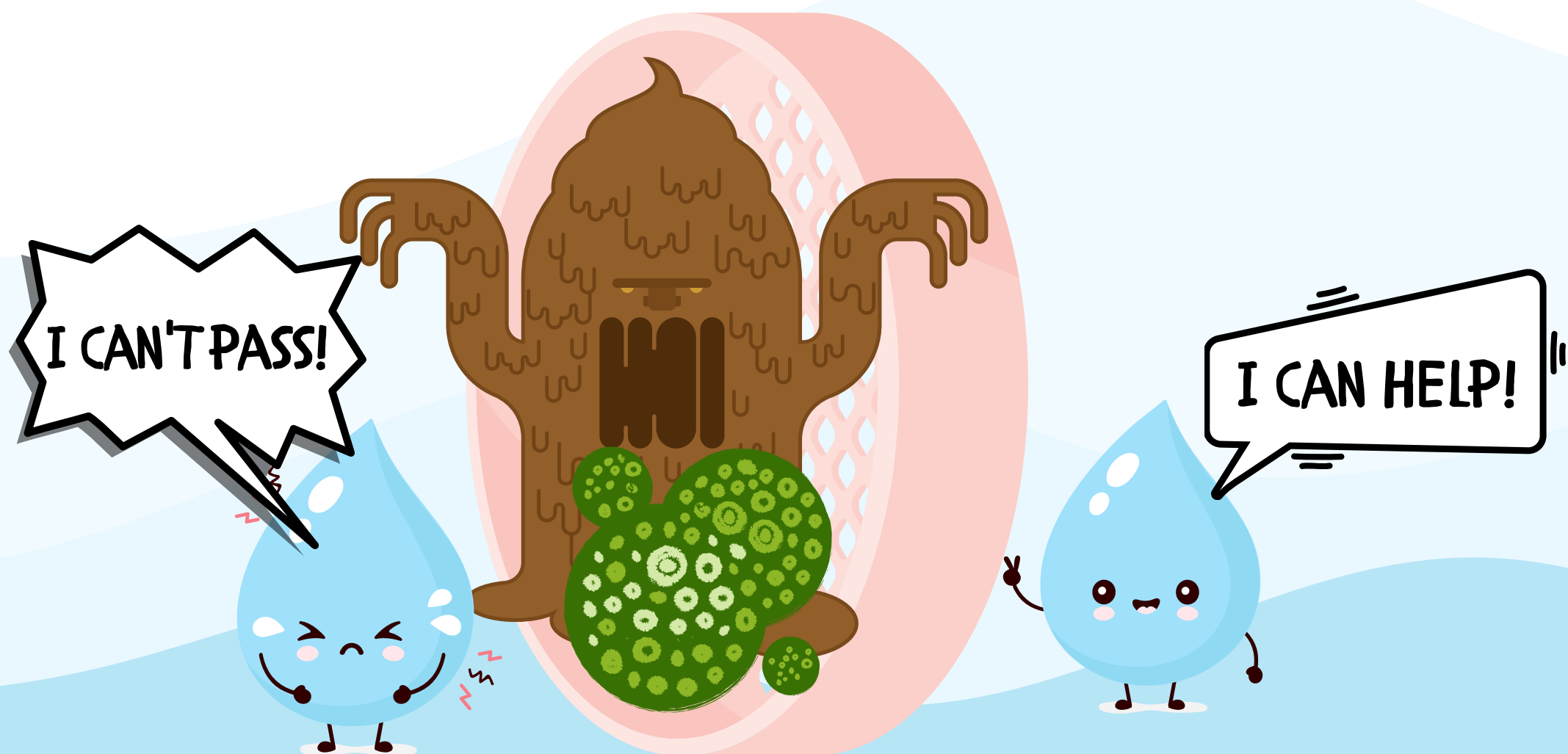
**IMAGINE, WE HAVE A YUCKY STINKY POND AND
WE WANT TO CLEAN IT, TO MAKE FRESH WATER
FOR DRINKING.**



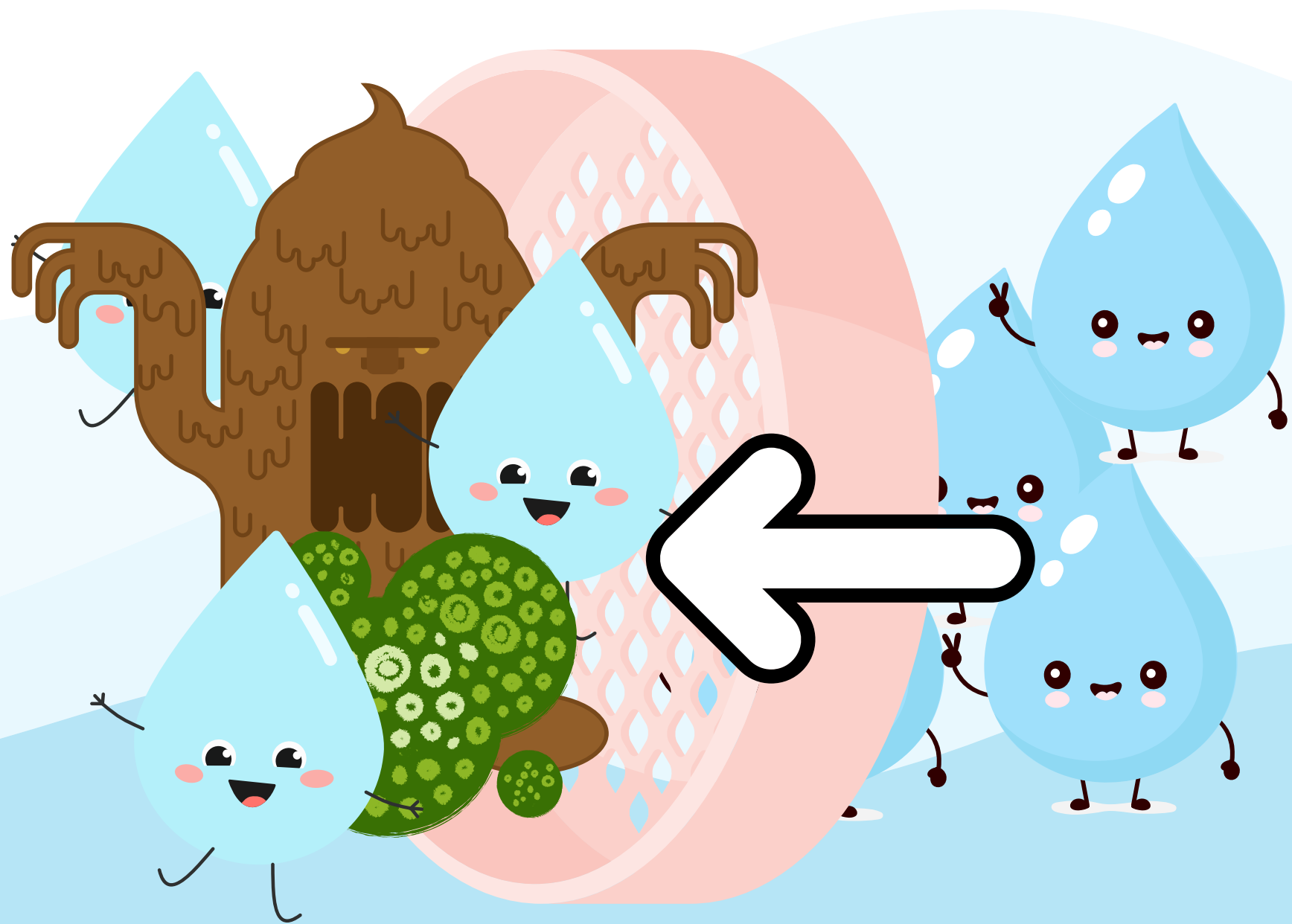
FIRST, WE HAVE TO MAKE SURE, THAT NO FISH, SMALLER ANIMALS OR FLOATING STUFF ENTERS OUR ULTRAFILTER. WE CALL THAT A PRE-FILTER.



**EVERYTHING THAT PASSES THE PRE-FILTER
GETS TO OUR ULTRAFILTER. IT IS AN ULTRA
SMALL MESH AND THE STINKY YUCKY STUFF
CAN'T GET TO THE OTHER SIDE OF IT.**



**AFTER A WHILE, SOME OF THE YUCKY STUFF STUCKS
IN THE FILTER. THEN, WATER CAN'T PASS THE FILTER
ANYMORE. WE ARE NOW USING SOME OF THE CLEAN
WATER ON THE OTHER SIDE OF THE FILTER TO
FLUSH OFF ALL THE YUCKY STUFF. WE CALL THAT
BACKWASHING.**



**DURING BACKWASHING ALREADY FILTERED WATER
IS PUSHED BACK THROUGH THE FILTER AND
REMOVES THE YUCKY STUFF THAT HAS STUCK ON
THE FILTER. NOW, THE FILTER IS FREE AND WE CAN
CLEAN MORE DIRTY WATER FOR ANOTHER WHILE.**



**THIS IS HOW WE GET ALL THE STINKY
YUCKY STUFF OUT OF THE WATER.**



**ULTRAFILTRATION HELPS US TO SAFELY
REMOVE BACTERIA AND SMALL PARTICLES
FROM WATER, TO MAKE IT SAFE FOR
GENERAL USAGE.**



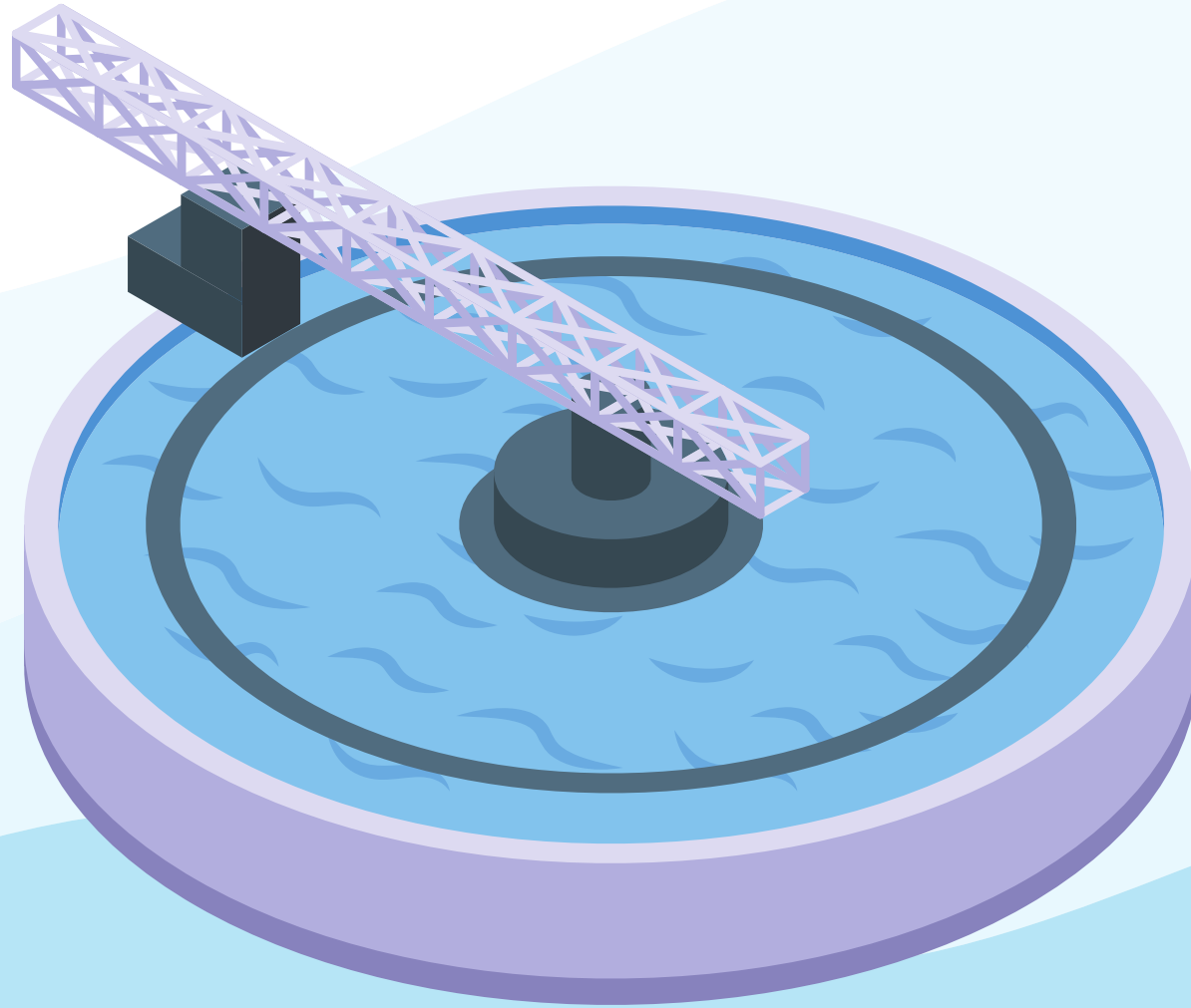
**THANKS TO ULTRAFILTRATION WE
CAN MAKE RIVER WATER
AVAILABLE FOR DRINKING.**



**ALSO POWER PLANTS NEED VERY CLEAN
WATER TO CREATE ELECTRICITY.
ULTRAFILTRATION HELPS THEM TO MAKE RIVER
WATER CLEAN SO IT CAN BE USED IN A BOILER.**



**HOSPITALS REQUIRE ULTRA CLEAN WATER TO
AVOID, THAT PEOPLE GET SICK FROM
BACTERIA, WHEN THEY ARE HAVING A
SURGERY. ULTRAFILTRATION HELPS THEM TO
MAKE SURE, THE WATER IS SAFE!**



**A LOT OF THE WATER IN RIVERS IS COMING
FROM WASTEWATER TREATMENT SYSTEMS.
ULTRAFILTRATION HELPS TO MAKE SURE, THAT
BACTERIA WHICH COULD MAKE US SICK, CAN'T
LEAVE THE WASTEWATER TREATMENT SYSTEM.**



**EVEN ALOT OF FOOD IS MADE WITH THE
HELP OF ULTRAFILTRATION, TO MAKE IT
TASTE BETTER AND TO MAKE IT SAFE.**



**ULTRAFILTRATION IS EVERYWHERE.
IT HELPS US TO MAKE ELECTRICITY, IT
KEEPS US SAFE AND IT EVEN HELPS US
MAKE BETTER FOOD!
THAT'S WHY IT IS SO COOL!**