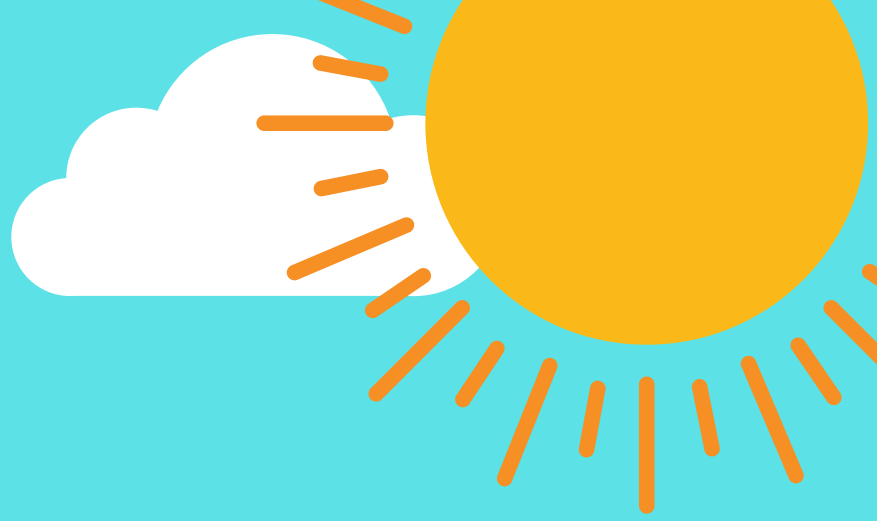




**EARTH'S EXTRAORDINARY
SOIL FOR ALL LIVING
ORGANISMS**

Learning, thinking, and acting!





**MY NAME IS LUMBRICUS, I AM
THE AMBASSADOR FOR THE SOIL.**

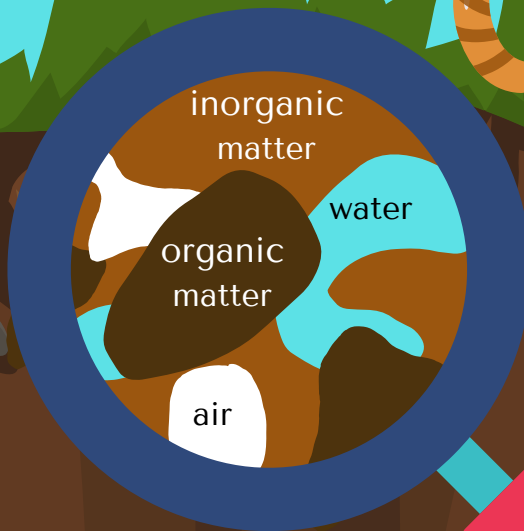
**I WILL TAKE YOU ON THIS
FABULOUS EDAPHIC JOURNEY.**



FIRST, WE NEED TO UNDERSTAND WHAT SOIL IS!

SOIL IS THE OUTER LAYER THAT COVERS THE TERRESTRIAL SURFACE.

SOLID PARTICLES ARE FORMED BY INORGANIC MATTER (AS WEATHERED ROCK, MINERAL GRAINS) AND ORGANIC MATTER.



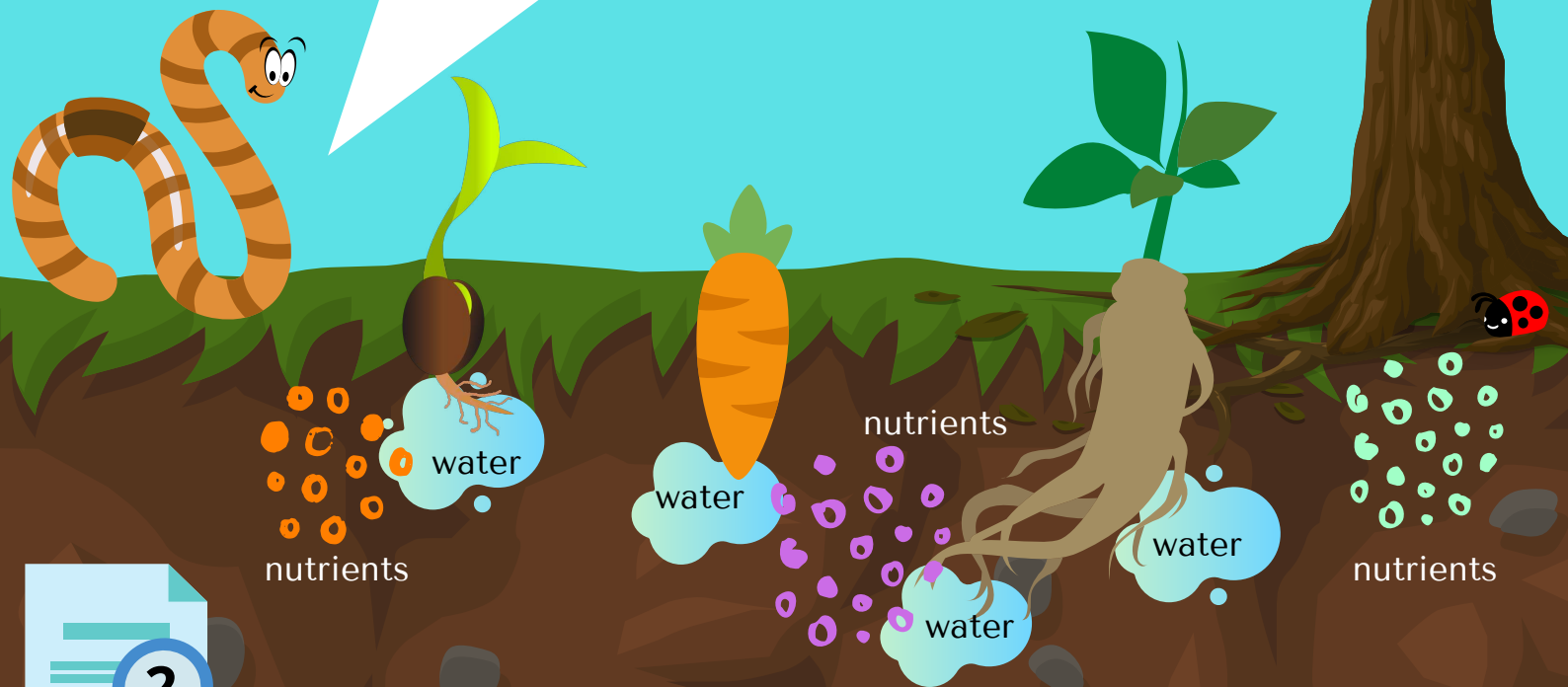
SOIL IS MADE UP OF SOLID PARTICLES AND PORE SPACES.

SOIL PORE SPACES ARE FILLED WITH WATER, AIR, AND A LOT OF ORGANISMS.

LET'S LEARN ABOUT THE IMPORTANCE OF SOIL!

HAVE YOU EVER THOUGHT ABOUT THE IMPORTANCE OF SOIL?
AND ABOUT THE BENEFITS WE CAN GET FROM THE SOIL?

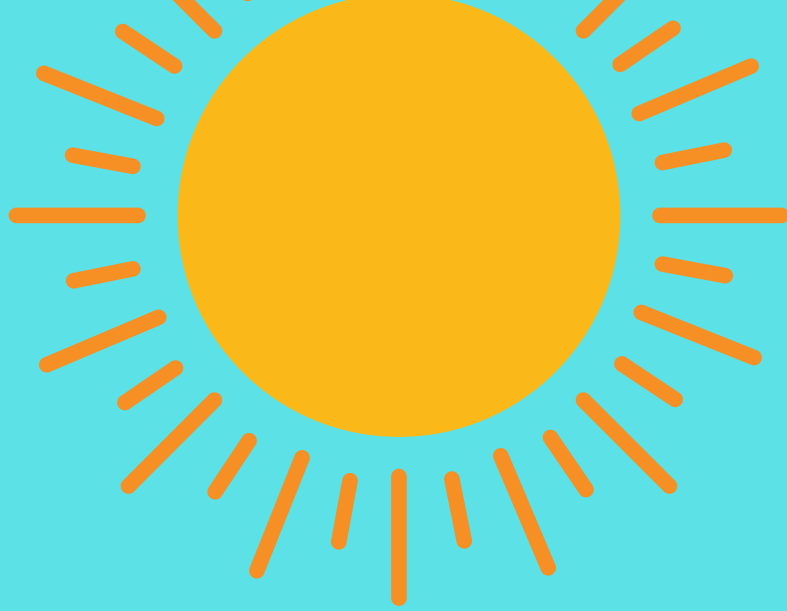
**SOIL SUPPORTS
BIODIVERSITY, PROVIDING
HABITAT, FOOD, WATER,
AND SHELTER FOR MANY
ANIMALS.**



**SOIL IS THE NATURAL MEDIUM FOR THE GROWTH OF
LAND PLANTS. SOILS STORE NUTRIENTS AND WATER
AND SUPPORT ROOTS GROWTH THAT SUSTAIN CROPS.
CROPS PROVIDE FOOD, FIBER, AND FUEL FOR US.**

**SOIL IS WHERE WE BUILD THE
INFRASTRUCTURE WE USE IN OUR DAY-
TO-DAY, SUCH AS HOUSES, SHOPS,
SCHOOLS, CROPS, AND PASTURES.**





Carbon

Carbon

SOILS, ALSO, STORE ORGANIC CARBON AND WATER.

SOIL PORE SPACES STORE WATER. THE WATER BELOW THE SOIL IS THE GROUNDWATER.





**BECAUSE OF THE VARIOUS
BENEFITS THAT SOILS PROVIDE
TO US, WE NEED TO CARE ABOUT
THE SOIL.
BUT...
ARE ALL SOILS HEALTHY?**

**LET'S UNDERSTAND THE ENVIRONMENTAL PROBLEMS
RELATED TO SOILS!**

**SOIL POLLUTION IS
WIDESPREAD. SOIL
DEGRADATION
LEADS TO THE
LOSS OF
NUTRIENTS,
BIODIVERSITY, AND
STORED CARBON.**



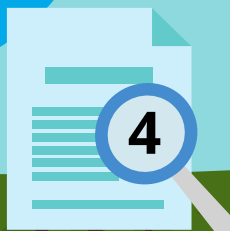
**OH NO!
SEVERAL BENEFITS
ARE LOST BY SOIL
DEGRADATION.**



SOIL SALINITY IS ONE OF THE MOST

WIDESPREAD TYPE OF SOIL DEGRADATION.

**PROCESSES OF SALINIZATION AND
SODIFICATION ARE A GLOBAL
ENVIRONMENTAL ISSUE THAT
AFFECT ALL LIVING ORGANISMS.**



**SALINIZATION AND SODIFICATION
THREATEN THE BENEFITS PROVIDED BY
SOIL.**

WHAT IS SALINIZATION?

SOIL SALINIZATION RESULTS FROM AN EXCESS OF SALTS.

SALINIZATION REFERS TO THE TOTAL SALT CONCENTRATION IN THE SOIL, AS SODIUM, POTASSIUM, MAGNESIUM, CALCIUM AND, CHLORIDE IONS.



THE SOURCE OF SALTS IN SOIL CAN BE NATURAL OR ANTHROPOGENIC. FOR EXAMPLE, NATURAL SOURCES REFER TO WEATHERING OF ROCKS. MAN-INDUCED SOURCES INCLUDE SALTS PRESENT IN IRRIGATION WATERS, ANIMAL WASTES AND SYNTHETIC FERTILIZERS USED IN THE FARMING ACTIVITIES.



**AND HOW DOES
THIS HAPPEN?**



1

**(1) SALTS DISSOLVE
IN THE WATER AND
MOVE THROUGH THE
EMPTY PORE
SPACES OF THE
SOILS.**

2

**(2) WHEN THE WATER
EVAPORATES, THE
SALTS ACCUMULATE IN
THE SOIL.**



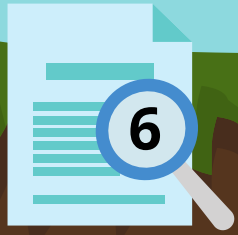
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Na⁺

**WHEN THE PROBLEM IS
SPECIFICALLY RELATED TO
THE SODIUM IONS,
THE PROCESS IS CALLED
SODIFICATION.**

OH NO!

**SEVERAL BENEFITS ARE LOST
BY SOIL SALINIZATION AND
SODIFICATION.**



**SALINIZATION AND SODIFICATION REDUCE SOIL QUALITY
AND, CONSEQUENTLY, VEGETATION COVER IN THE SOIL.**

**THE EXCESS OF SALTS DESTROYS THE SOIL STRUCTURE,
CAUSING LOSS OF FERTILITY AND REDUCING PLANT GROWTH.
THUS, CROP PRODUCTIVITY COLLAPSES.**

**ALSO, SALINIZATION AND SODIFICATION CHANGE LOCAL
CLIMATIC CONDITIONS AND AFFECT SOIL BIODIVERSITY AND
THE QUALITY AND QUANTITY OF THE GROUNDWATER.**



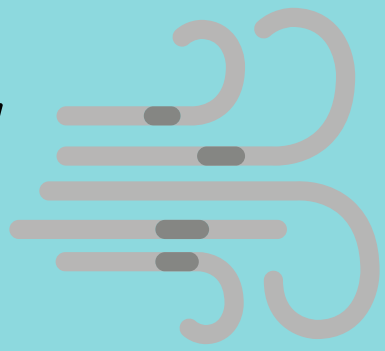
LET'S THINK ABOUT WHAT SALINIZATION AND SODIFICATION DO TO THE SOIL!



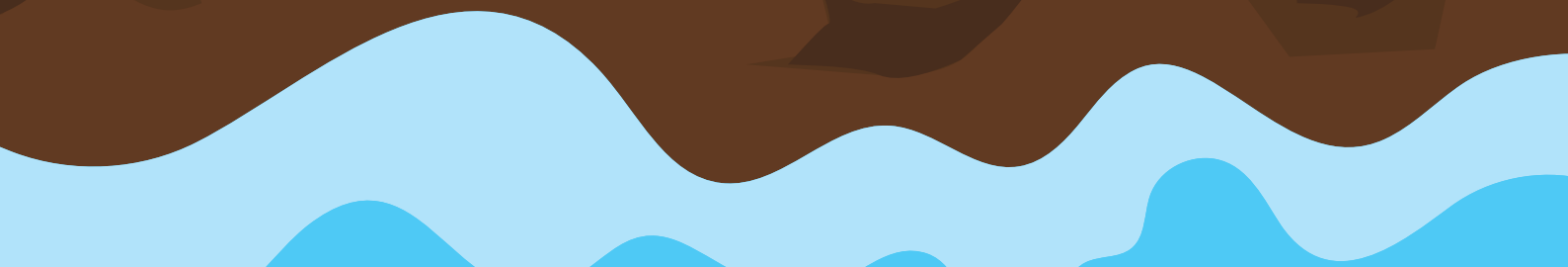
ONE OF THE BIGGEST THREATS TO OUR FUTURE IS THE LOSS IN SOIL PRODUCTIVITY. IF WE REMEMBER THE BENEFITS OF THE SOIL, SODIFICATION AND SALINIZATION WILL AFFECT IN A BAD WAY THE QUALITY AND QUANTITY OF THE FOOD WE EAT AND THE WATER WE DRINK.

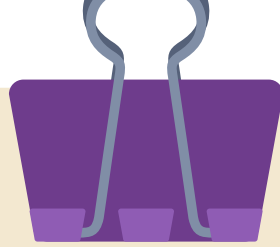


LET'S TAKE ACTION!



LET'S SPREAD A "SEED OF INFORMATION" TO ALL PEOPLE TO KNOW ABOUT THE IMPORTANCE AND THE ENVIRONMENTAL PROBLEMS THAT AFFECT SOIL QUALITY.

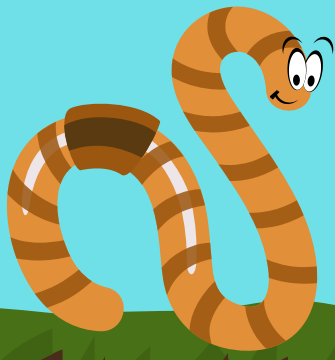




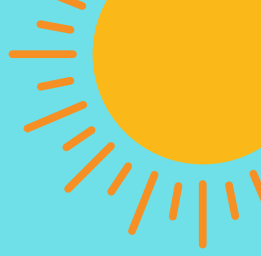
CREATE A PODCAST OR A FLYER WITH ALL THE INFORMATION YOU LEARN AND SPREAD IT TO YOUR COLLEAGUES, NEIGHBORS, AND FAMILY.

LET'S TELL PEOPLE A LITTLE MORE ABOUT THE SOIL SALINIZATION AND SODIFICATION AND HOW IT'S IMPORTANT TO DISCUSS THESE ENVIRONMENTAL PROBLEMS WITH SCIENTISTS, POLITICIANS, AND COMMUNITY.

DISCUSSION ON SUSTAINABLE SOIL MANAGEMENT (AS BEST MANAGEMENT ON IRRIGATION AND FERTILIZATION PRACTICES, REFORESTATION, AGROFORESTRY) WILL HELP US KEEP THE SOIL HEALTHY FOR ALL LIVING ORGANISMS ON EARTH.



LET'S



**HALT SOIL SALINIZATION,
BOOST SOIL
PRODUCTIVITY**

TOGETHER!





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