

WATER IN YOUR HANDS



Speakers' Bureau
Permanent Collection

Your life depends on water!

WATER HELPS US GROW PLANTS FOR FOOD AND BUILDING MATERIALS.

WATER IS PRESENT IN ALL FOODS AND IS USED IN THEIR PREPARATION.

OUR BODIES NEED WATER TO MOVE, THINK, AND FEEL.

WATER HELPS MOVE FOOD AND WASTE THROUGH THE BODIES OF ALL LIVING THINGS.

OUR SUPPLY OF GOOD WATER IS LIMITED.

WATER PRODUCES POWER FOR OUR USE IN HOMES AND INDUSTRY

POLLUTED WATER CAN BE DANGEROUS TO ALL LIVING THINGS.

WATER CAN BE FUN

BODIES OF WATER ARE USED TO TRANSPORT PEOPLE AND PRODUCTS.

2 CLEAN WATER HELPS US LIVE WELL AND STAY HEALTHY. POLLUTED WATER CAN HURT OR RUIN LIVES. BECAUSE YOU AND ALL LIVING THINGS DEPEND ON WATER, IT'S IMPORTANT TO UNDERSTAND WATER AND ITS USE. PLEASE READ THIS BOOKLET AND SHARE IT WITH OTHERS. HELP PROTECT WATER AND USE IT WISELY!

WATER IN YOUR HANDS. SPONSORED AND DISTRIBUTED BY THE SOIL AND WATER CONSERVATION SOCIETY. CREATED BY CUSTOM COMIC SERVICES. EDUCATIONAL AND PROMOTIONAL COMIC BOOKS, P.O. BOX 726, GLENSIDE, PA. 19038. WRITTEN BY SCOTT DESCHAIINE AND MIKE BENTON. SCRIPT © 1990 CUSTOM COMIC SERVICES. ILLUSTRATIONS BY FRAN MATERA. EDITED BY TIM KAUTZA. CARTOON BOOKLET © 1990 SOIL AND WATER CONSERVATION SOCIETY. ALL RIGHTS RESERVED.

THERE'S MORE TRASH DOWN HERE!

LET'S GET SOME HELP SO WE CAN PICK IT UP BEFORE IT **RAINS** AND **WASHES** INTO THE STREAM!

THERE'S MORE TRASH DOWN HERE!

LET'S GET SOME HELP SO WE CAN PICK IT UP BEFORE IT **RAINS** AND **WASHES** INTO THE STREAM!

IF THIS GOT IN THE WATER, IT COULD KILL THE FISH!

THANKS FOR HELPING TO KEEP ME CLEAN!

WHO SAID THAT?

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WHO...OR WHAT ARE YOU?

MY NAME IS FRESH WATER.

IT LOOKS LIKE IT'S ALL WATER!

SURE EVERY LIVING THING IS MADE OF WATER!

AND EVERYTHING DEPENDS ON WATER TO LIVE... BUT YOU'RE AMAZING!

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DON'T BE SURPRISED-- AFTER ALL YOU'RE MORE THAN **HALF** WATER YOURSELF!

LIQUID

SOLID

GAS

SURE EVERY LIVING THING IS MADE OF WATER!

AND EVERYTHING DEPENDS ON WATER TO LIVE-- BUT YOU'RE PRETTY AMAZING!

WATER HAS **MANY** AMAZING PROPERTIES! I CAN CHANGE INTO MANY SHAPES OR FORMS LIKE RAIN, ICE, OR WATER VAPOR.

3

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AND EVERYTHING **DEPENDS** ON WATER TO LIVE-- BUT YOU'RE PRETTY **AMAZING!**

WATER HAS **MANY** AMAZING PROPERTIES! I CAN CHANGE INTO MANY **SHAPES** OR **FORMS** LIKE **RAIN**, **ICE**, OR **WATER VAPOR!**

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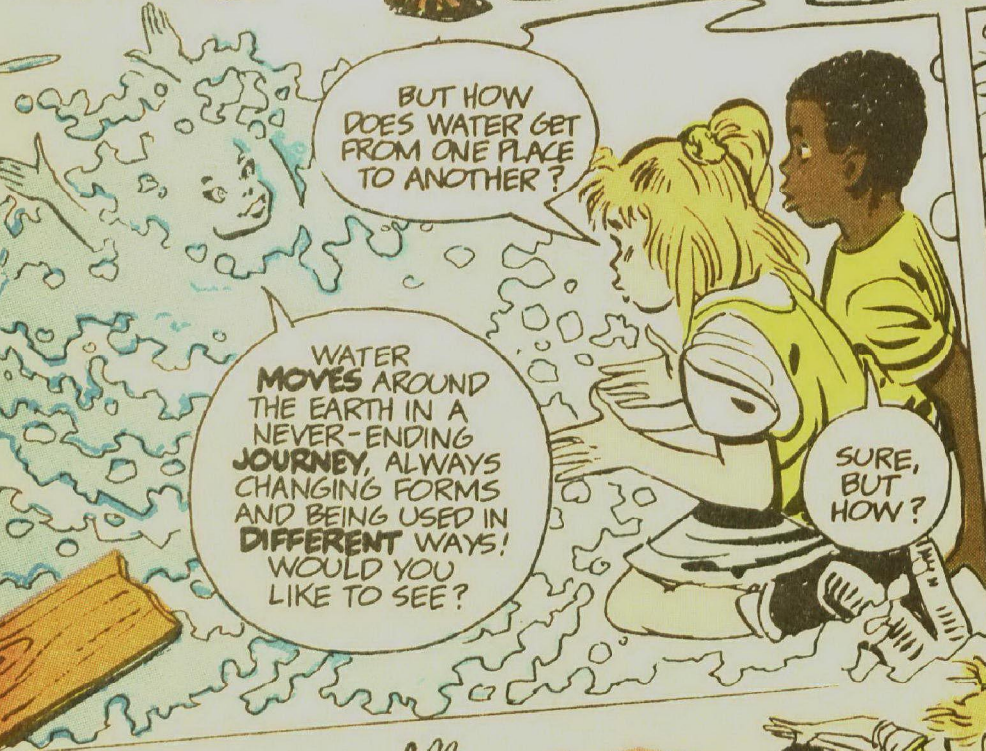
3



I'M REALLY PRETTY SPECIAL, YOU KNOW, ALL LIVING THINGS NEED PLENTY OF CLEAN WATER TO LIVE. THEY'VE DEPENDED ON ME FOR MILLIONS OF YEARS.

WHERE DOES WATER COME FROM?


WATER FORMED **MILLIONS** OF YEARS AGO! WATER YOU USE TODAY MIGHT HAVE BEEN USED BY YOUR GRANDPARENTS OR EVEN HAVE BEEN PART OF A PLANT OR ANIMAL THAT LIVED LONG AGO.



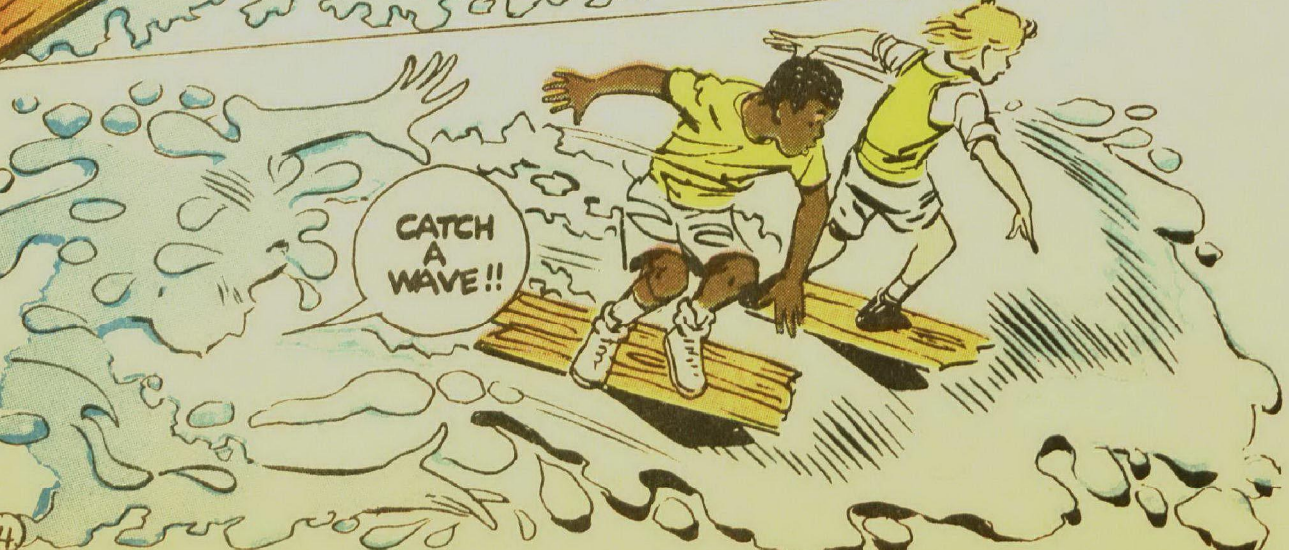
BUT HOW DOES WATER GET FROM ONE PLACE TO ANOTHER?

WATER **MOVES** AROUND THE EARTH IN A NEVER-ENDING **JOURNEY**, ALWAYS CHANGING FORMS AND BEING USED IN **DIFFERENT** WAYS! WOULD YOU LIKE TO SEE?

SURE, BUT HOW?



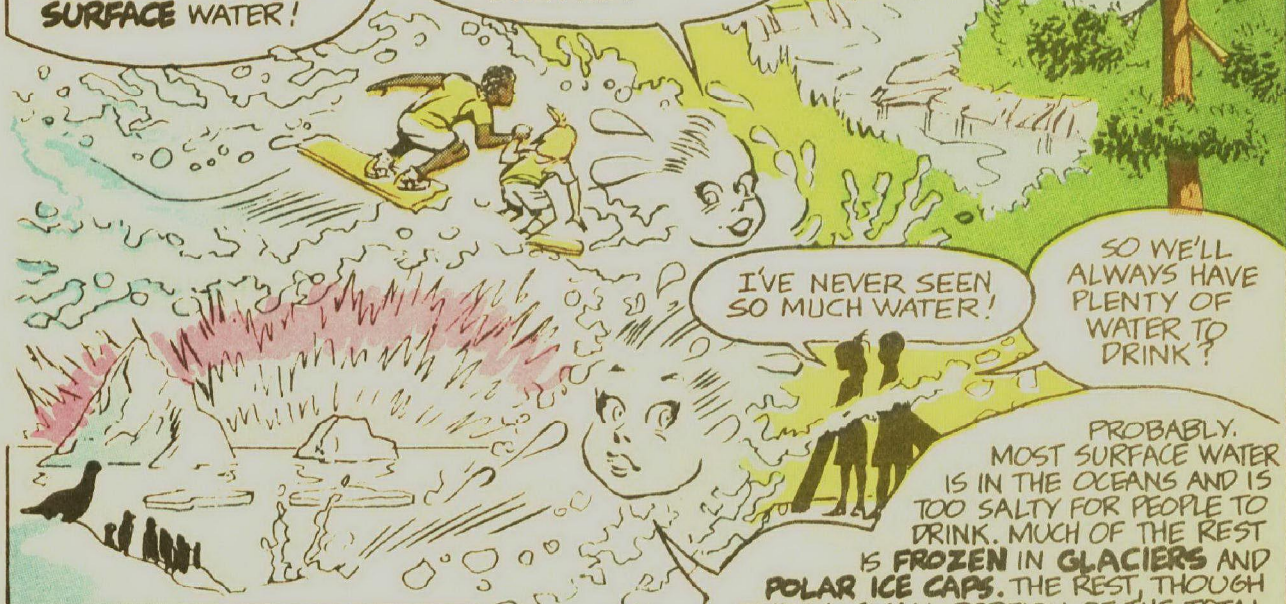
PUT THOSE BOARDS NEAR THE STREAM AND.....



CATCH A WAVE!!

WATER ON THE GROUND - PUDDLES, LAKES, RIVERS, AND OCEANS IS CALLED **SURFACE WATER**!

WATER COVERS ALMOST **THREE-FOURTHS** OF THE EARTH'S SURFACE!



I'VE NEVER SEEN SO MUCH WATER!

SO WE'LL ALWAYS HAVE PLENTY OF WATER TO DRINK?

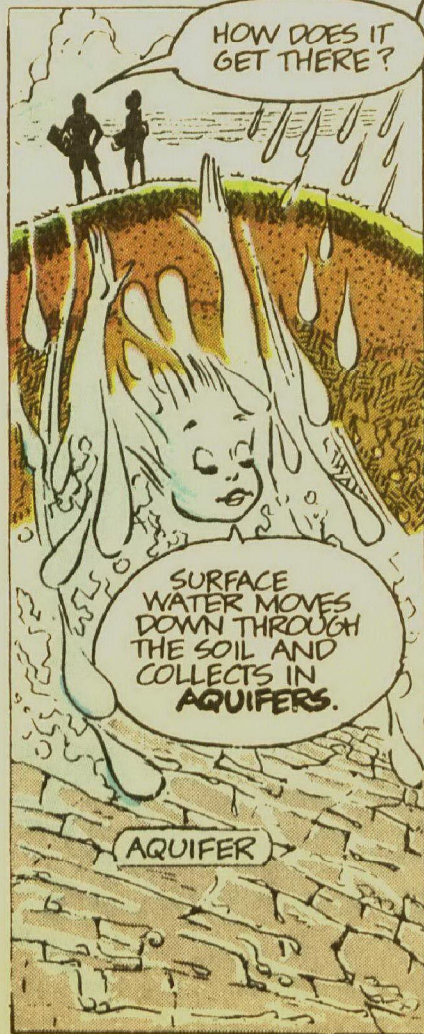
PROBABLY. MOST SURFACE WATER IS IN THE OCEANS AND IS TOO SALTY FOR PEOPLE TO DRINK. MUCH OF THE REST IS **FROZEN IN GLACIERS AND POLAR ICE CAPS**. THE REST, THOUGH ONLY A SMALL PORTION OF THE TOTAL, IS AVAILABLE FOR USE BY LIVING THINGS.

SOME WATER IS IN THE GROUND. IT'S CALLED **GROUNDWATER**.

HOW DOES IT GET THERE?

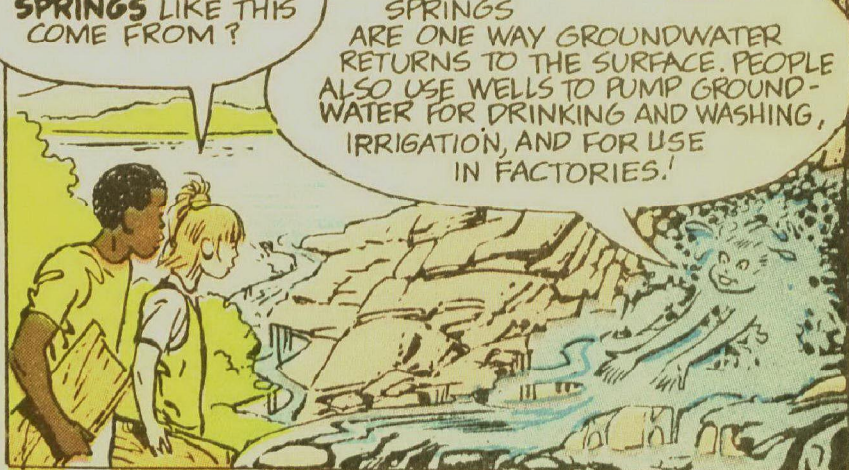
IS THAT WHERE **SPRINGS** LIKE THIS COME FROM?

SPRINGS ARE ONE WAY GROUNDWATER RETURNS TO THE SURFACE. PEOPLE ALSO USE **WELLS** TO PUMP GROUNDWATER FOR DRINKING AND WASHING, IRRIGATION, AND FOR USE IN **FACTORIES**!



SURFACE WATER MOVES DOWN THROUGH THE SOIL AND COLLECTS IN **AQUIFERS**.

AQUIFER



IT SEEMS LIKE WATER IS ALWAYS MOVING FROM THE SURFACE INTO THE GROUND AND THEN BACK AGAIN.

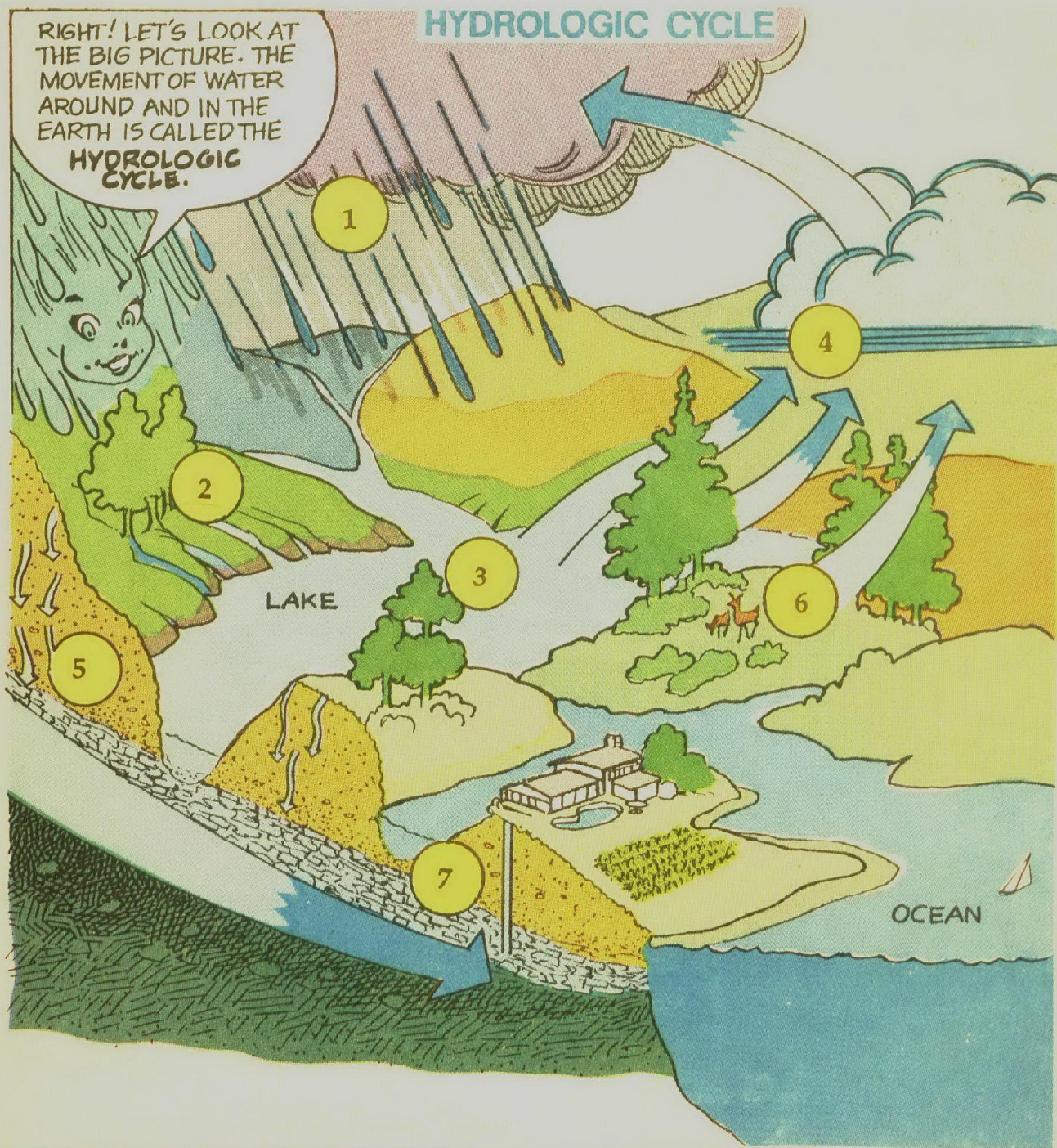
WATER ALSO MOVES FROM THE SURFACE INTO THE ATMOSPHERE AND FORMS **CLOUDS**.

AND WHEN IT RAINS THE WATER FALLS BACK TO THE LAND SURFACE!

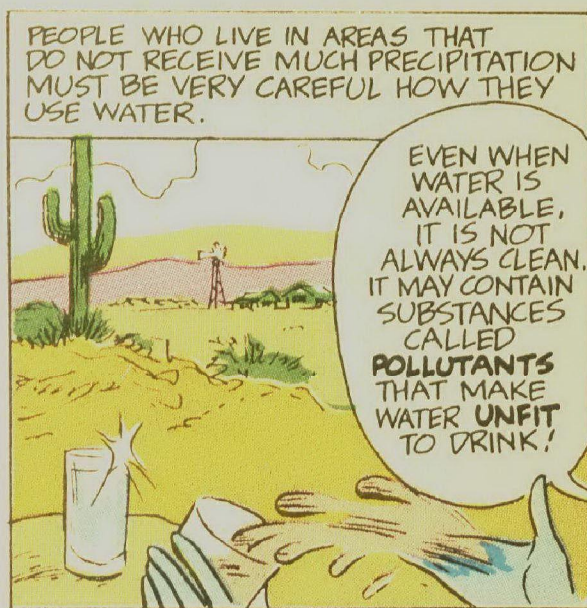
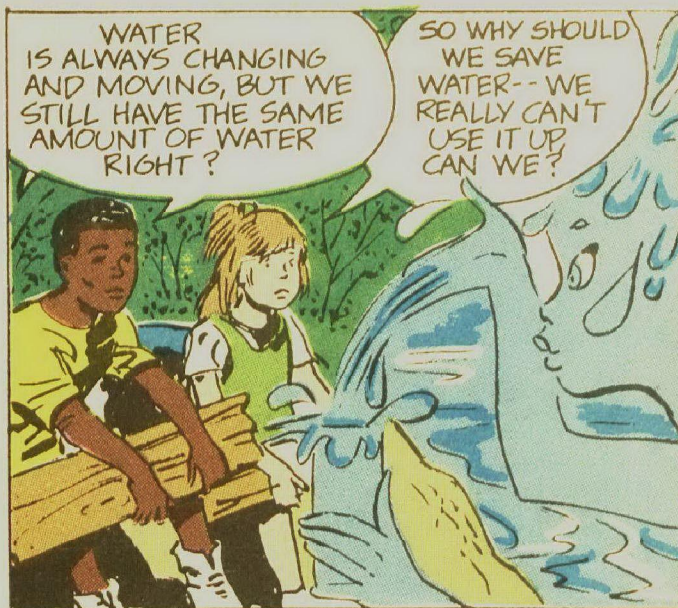


HYDROLOGIC CYCLE

RIGHT! LET'S LOOK AT THE BIG PICTURE. THE MOVEMENT OF WATER AROUND AND IN THE EARTH IS CALLED THE **HYDROLOGIC CYCLE**.



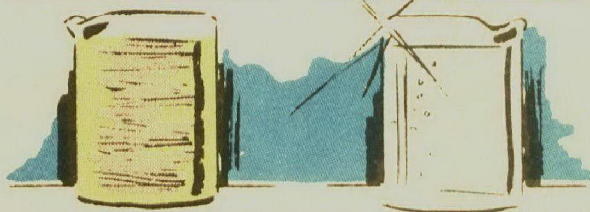
- ① RAIN OR SNOW FALLS ON OCEANS AND LAND AS **PRECIPITATION**.
- ② SOME WATER RUNS OFF THE LAND INTO STREAMS, MARSHES, LAKES, AND OCEANS. WATER THAT REMAINS ON THE EARTH'S SURFACE IS CALLED **SURFACE WATER**.
- ③ SURFACE WATER RETURNS TO THE ATMOSPHERE THROUGH **EVAPORATION**.
- ④ WATER VAPOR MAY FORM CLOUDS AND RETURN TO THE SURFACE AS **PRECIPITATION**.
- ⑤ SOME WATER SOAKS INTO THE SOIL. IT MAY BE TAKEN INTO PLANTS THROUGH ROOTS, OR IT MAY MOVE DOWN THROUGH THE SOIL AND BECOME **GROUNDWATER**.
- ⑥ PLANTS AND ANIMALS ALSO GIVE OFF WATER TO THE ATMOSPHERE AS **WATER VAPOR**.
- ⑦ GROUNDWATER MAY BE PUMPED TO THE SURFACE IN WELLS OR MAY RETURN NATURALLY TO THE SURFACE TO BECOME PART OF STREAMS, MARSHES, LAKES, OR OCEANS.



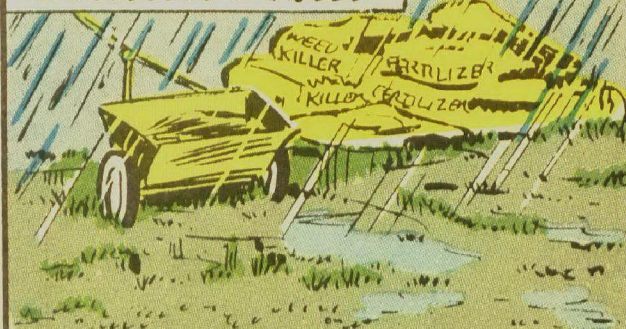
SOME SUBSTANCES WHEN COMBINED WITH WATER MAKE THE WATER HARMFUL OR USELESS TO LIVING THINGS. MANY USEFUL SUBSTANCES CAN BECOME POLLUTANTS WHEN THEY ARE IN WATER, LIKE PESTICIDES USED TO KILL WEEDS AND INSECTS, GASOLINE, FERTILIZER, SALT, AND EVEN SOIL.

-- SOMETIMES YOU CAN SEE POLLUTANTS.

-- SOMETIMES YOU CANNOT.

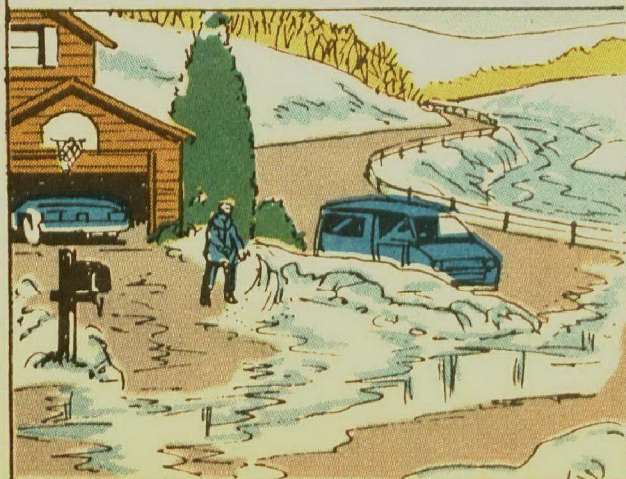


POSSIBLE POLLUTANTS, IF NOT PROPERLY CONTROLLED, CAN EASILY GET INTO WATER SUPPLIES. MANY SUBSTANCES CAN RUIN WATER IF THEY ARE **CARELESSLY** HANDLED.



IF LAWN FERTILIZER IS NOT USED CORRECTLY IT MAY POLLUTE STREAMS AND LAKES.

SALT USED TO MELT ICE FROM ROADS, AND OIL AND GASOLINE THAT HAS LEAKED FROM VEHICLES CAN BE WASHED AWAY BY RAIN OR MELTED SNOW AND POLLUTE STREAMS.

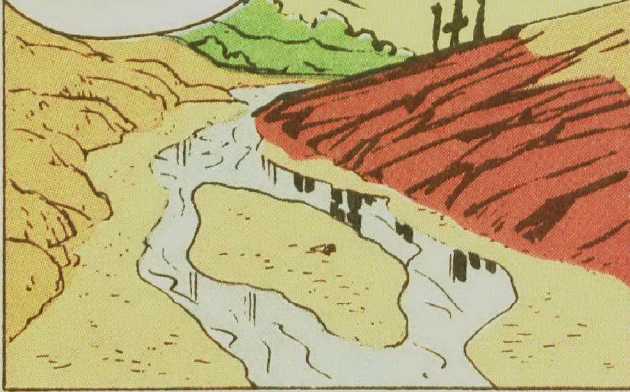


TO HELP KEEP WATER FROM BEING POLLUTED, DISPOSE OF POSSIBLE POLLUTANTS PROPERLY.



SURFACE WATER CAN BECOME POLLUTED WHEN SOIL, OR **SEDIMENT**, WASHES INTO STREAMS AND RIVERS.

HOW CAN SOIL GET INTO THE WATER?



MISUSE OF THE LAND LIKE FARMING UP AND DOWN HILLS OR LEAVING SOIL BARE DURING HIGHWAY CONSTRUCTION, CAN CAUSE A LARGE AMOUNT OF **SEDIMENT** TO WASH INTO STREAMS.



TOO MUCH SEDIMENT CAN BLOCK SUNLIGHT AND SMOTHER WATER LIFE. IT CAN MAKE BODIES OF WATER TOO SHALLOW FOR TRAVEL AND CAN INCREASE FLOODING OF NEARBY LAND.



SURFACE WATER POLLUTION CAUSED BY **SOIL EROSION** CAN BE REDUCED BY FARMING ACROSS HILLS AND PLANTING GRASS WHERE WATER COLLECTS AND RUNS OFF FROM THE LAND,



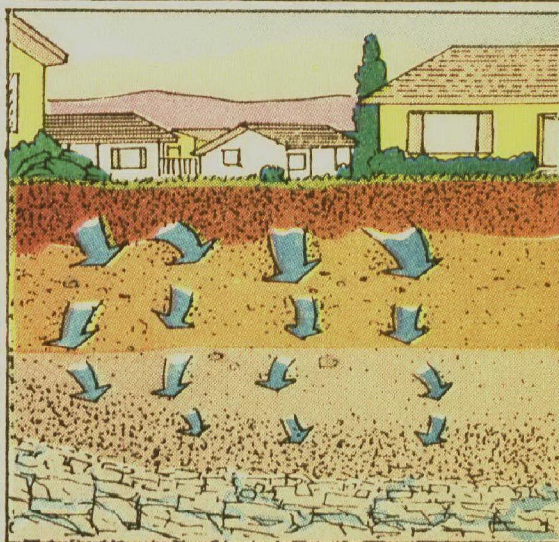
AND BY PLACING PROTECTIVE COVERING ON BARE SOIL DURING CONSTRUCTION.



I UNDERSTAND HOW OUR SURFACE WATER CAN BECOME POLLUTED, BUT WON'T GROUNDWATER BE SAFE FROM POLLUTANTS?

NOT NECESSARILY. POLLUTED SURFACE WATER AND CHEMICALS CAN TRAVEL THROUGH SOIL INTO GROUNDWATER.

CHEMICALS, LIKE FERTILIZERS AND PESTICIDES, MAY MOVE THROUGH THE SOIL INTO GROUNDWATER WHEN USED IMPROPERLY OR IN EXCESS.

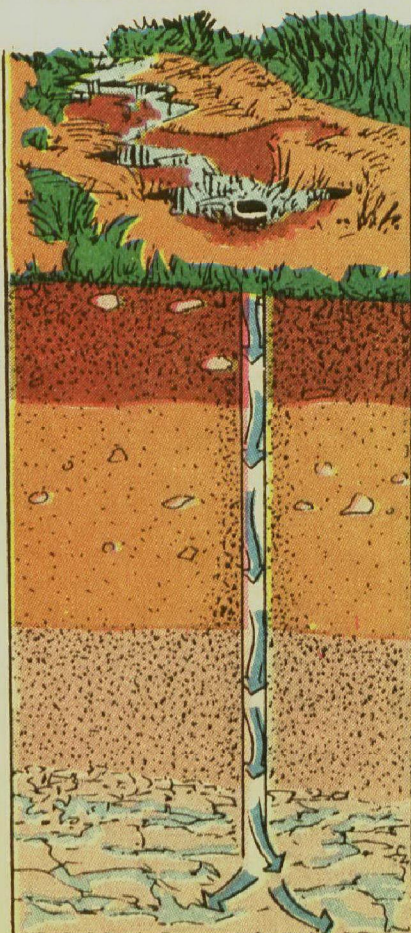
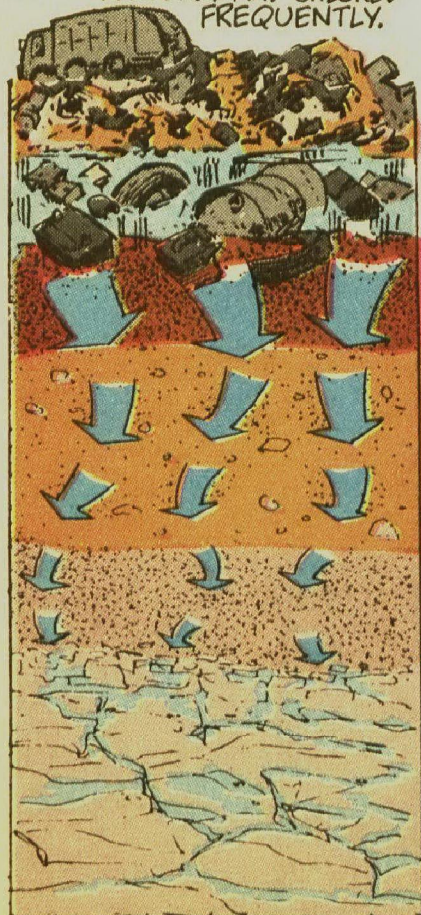


POLLUTED WATER FROM **LANDFILLS** CAN ALSO MOVE INTO GROUNDWATER. LANDFILLS AND OTHER PLACES WHERE POSSIBLE POLLUTANTS ARE STORED MUST BE BUILT PROPERLY AND CHECKED FREQUENTLY.

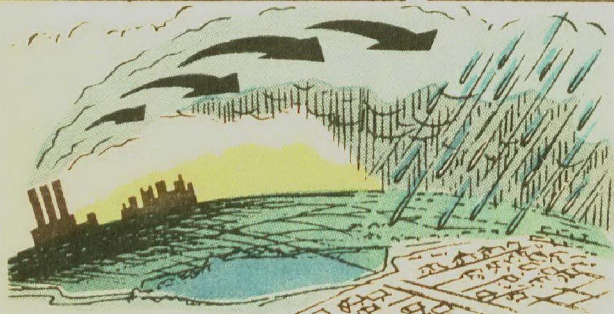
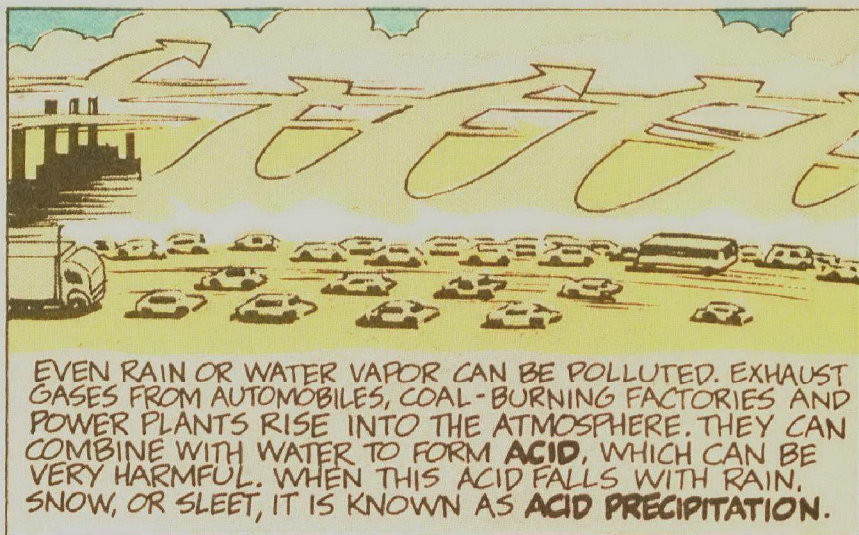
OLD, OPEN WELLS ARE DIRECT PATHS FOR POLLUTED SURFACE WATER TO REACH GROUNDWATER. SUCH WELLS SHOULD BE PROPERLY **SEALED**.

WHAT HAPPENS WHEN GROUNDWATER BECOMES POLLUTED?

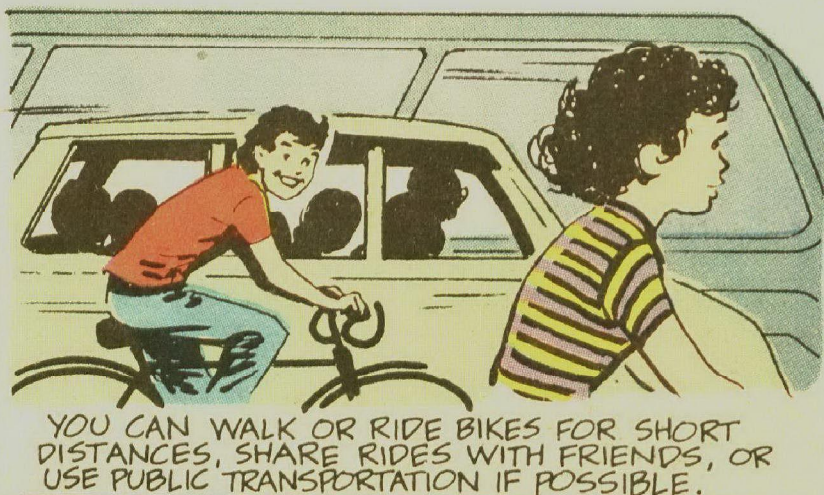
ONCE GROUNDWATER IS POLLUTED, IT IS VERY DIFFICULT AND EXPENSIVE TO CLEAN IT.



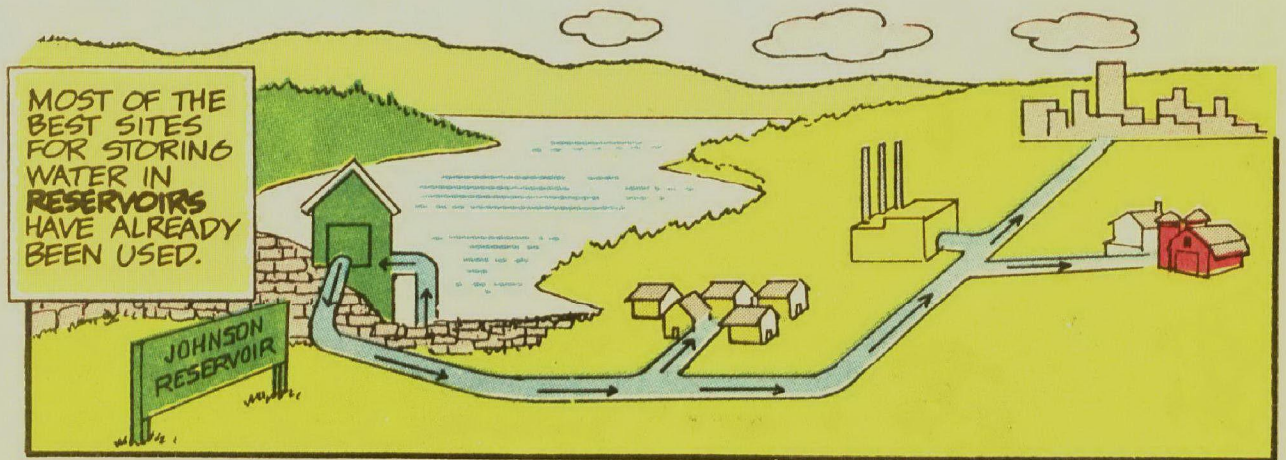
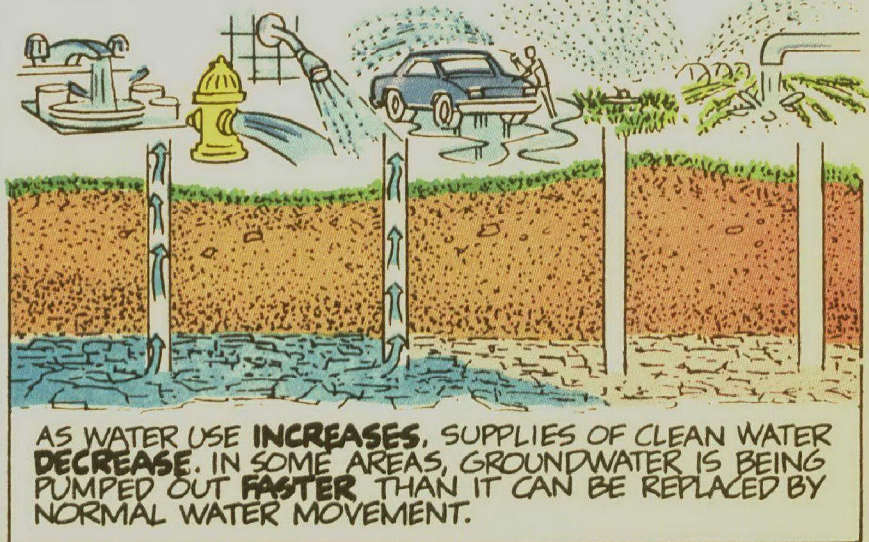
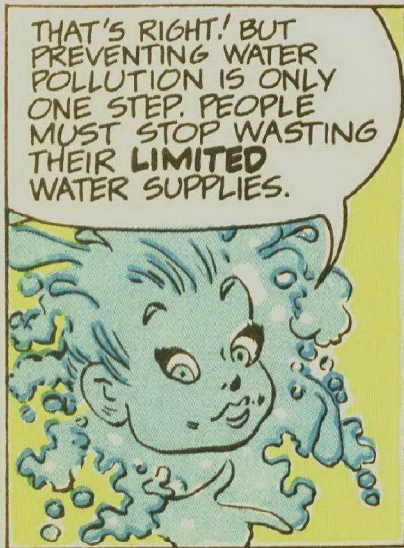
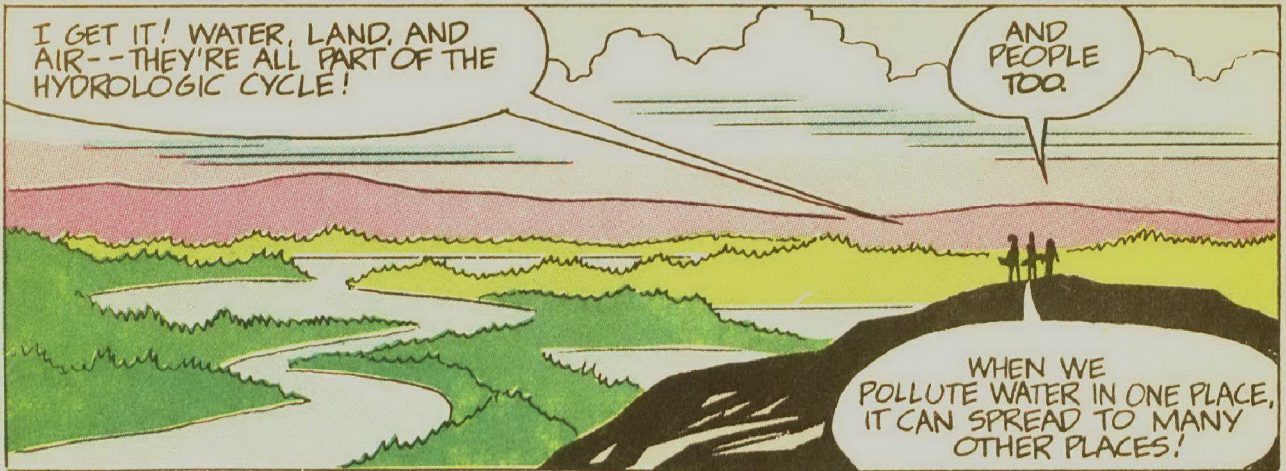
SOMETIMES, IT MAY BE TOO EXPENSIVE TO CLEAN AND WILL REMAIN UNFIT TO USE -- FOREVER!



ACID PRECIPITATION CAN HARM PLANTS ON LAND AS WELL AS PLANTS AND ANIMALS THAT LIVE IN STREAMS AND LAKES THOUSANDS OF MILES FROM THE SOURCE OF POLLUTION. ALREADY THERE ARE MANY LAKES IN WHICH ONLY A FEW THINGS CAN LIVE BECAUSE OF HIGH ACID LEVELS.



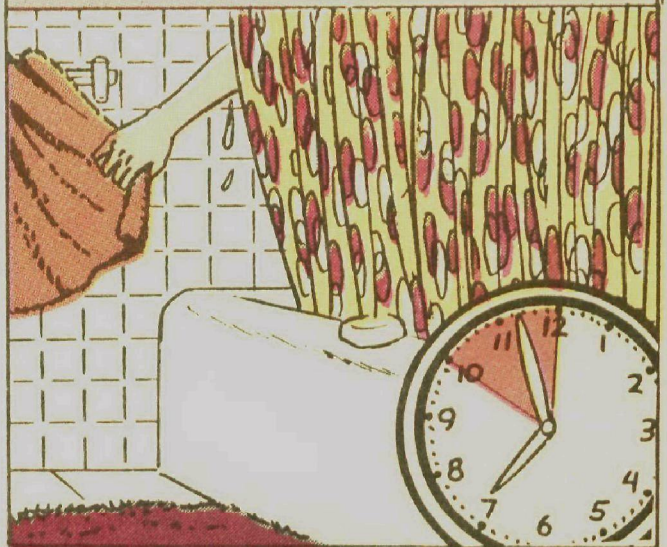
PEOPLE COULD **USE LESS** ELECTRICITY. THE LESS YOU USE, THE LESS COAL-BURNING POWER PLANTS MUST PRODUCE. THAT MAY MEAN LESS ACID PRECIPITATION.



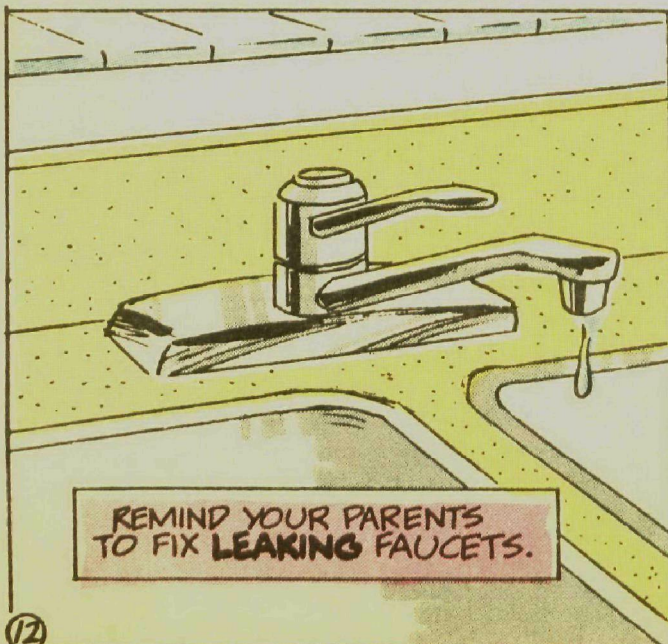
YOU CAN DO MANY THINGS TO SAVE AND PROTECT OUR WATER. FIRST, DON'T LEAVE WATER **RUNNING!** TURN IT ON ONLY WHEN YOU NEED IT AS YOU BRUSH YOUR TEETH, WASH YOUR CAR, OR WATER YOUR PLANTS.



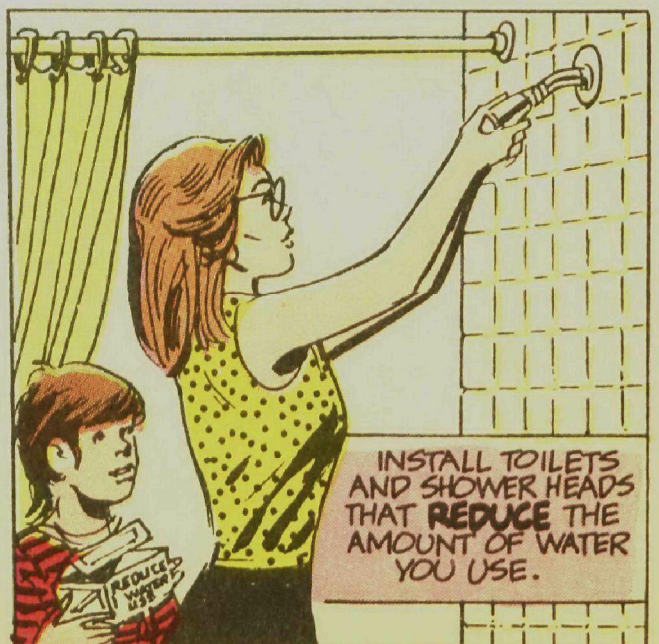
SHORT SHOWERS USE LESS WATER THAN BATHS!



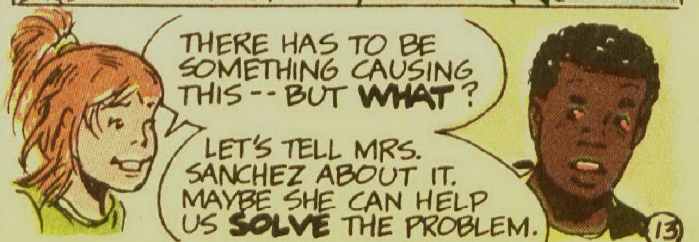
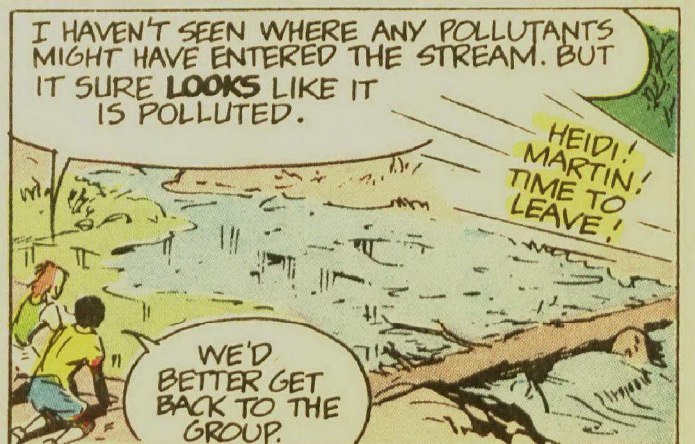
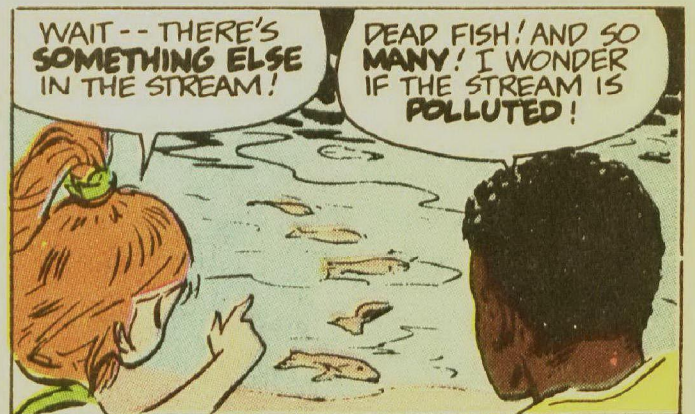
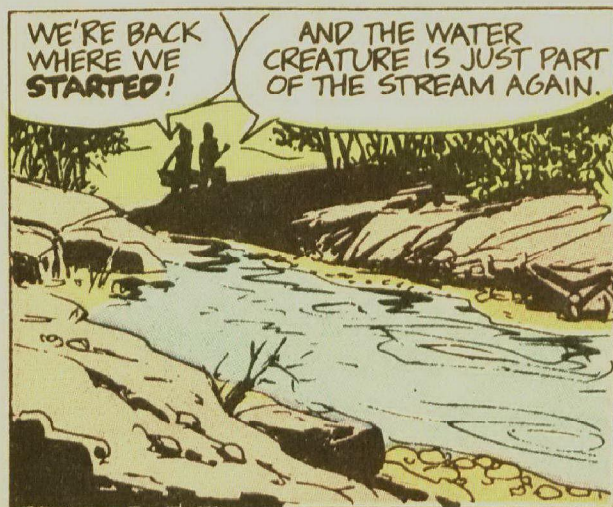
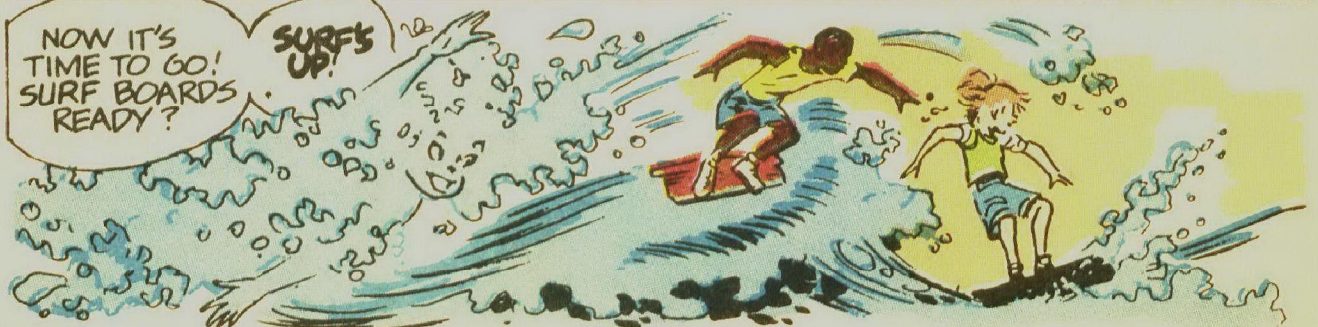
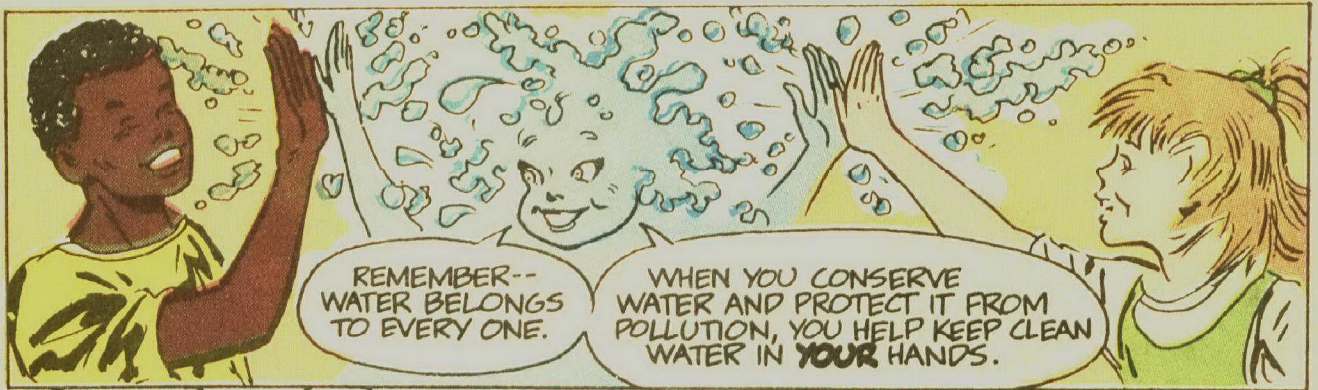
IN AREAS THAT RECEIVE VERY LITTLE PRECIPITATION, YOU CAN SAVE, OR CONSERVE, WATER BY CREATING A YARD OF PLANTS THAT NEED **LITTLE** OR NO WATERING.

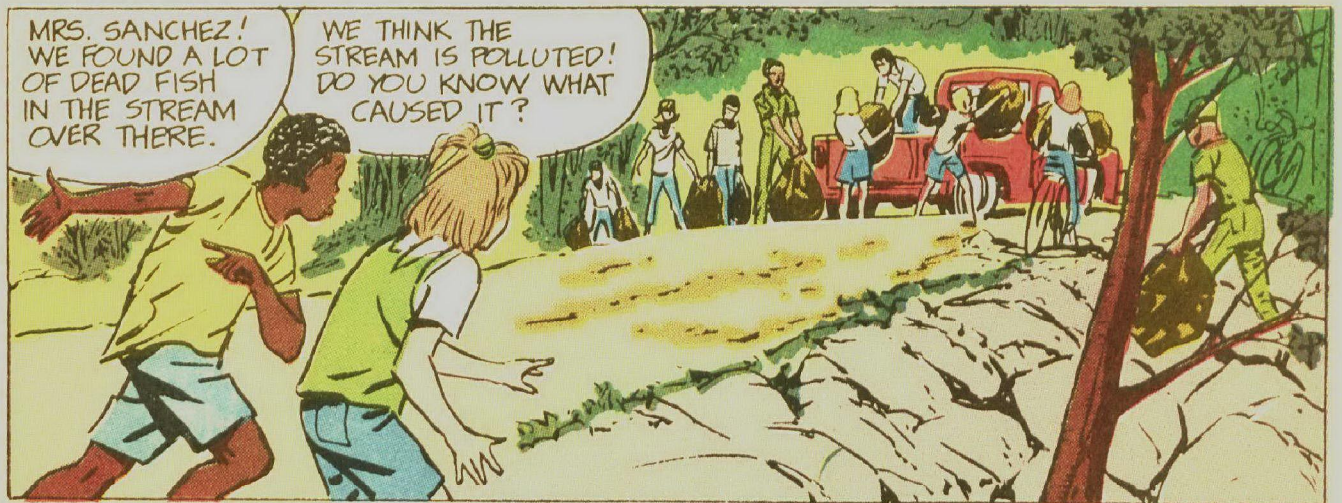


REMAND YOUR PARENTS TO FIX **LEAKING FAUCETS.**



INSTALL TOILETS AND SHOWER HEADS THAT **REDUCE** THE AMOUNT OF WATER YOU USE.





MRS. SANCHEZ!
WE FOUND A LOT
OF DEAD FISH
IN THE STREAM
OVER THERE.

WE THINK THE
STREAM IS POLLUTED!
DO YOU KNOW WHAT
CAUSED IT?

THERE ARE SEVERAL
POSSIBLE CAUSES. I'LL
CONTACT THE CITY
WATER QUALITY
DEPARTMENT.
THEY'LL WANT
TO KNOW ABOUT
THIS.

NEXT DAY...

THERE ARE
EVEN **MORE**
DEAD FISH
TODAY!

THIS LOOKS
SERIOUS.
THANKS FOR
LETTING ME
KNOW ABOUT
IT.

WHAT IS
CAUSING
THIS?

WE'LL TEST THE WATER TO FIND
OUT AND LOOK FOR IT'S
SOURCE. THERE COULD BE
MANY CAUSES. THEN WE'LL TRY
TO CORRECT THE PROBLEM.

REPORTING
THIS TO ME SHOWS
YOUR **CONCERN**
FOR THIS STREAM
AND THE LIFE IT
SUPPORTS. YOU
MAY HAVE PROTECTED
THE HEALTH OF
MANY LIVING
THINGS, INCLUDING
PEOPLE WHO
MIGHT HAVE
USED THIS
WATER.

OH, WE DIDN'T
DO IT **ALONE**.

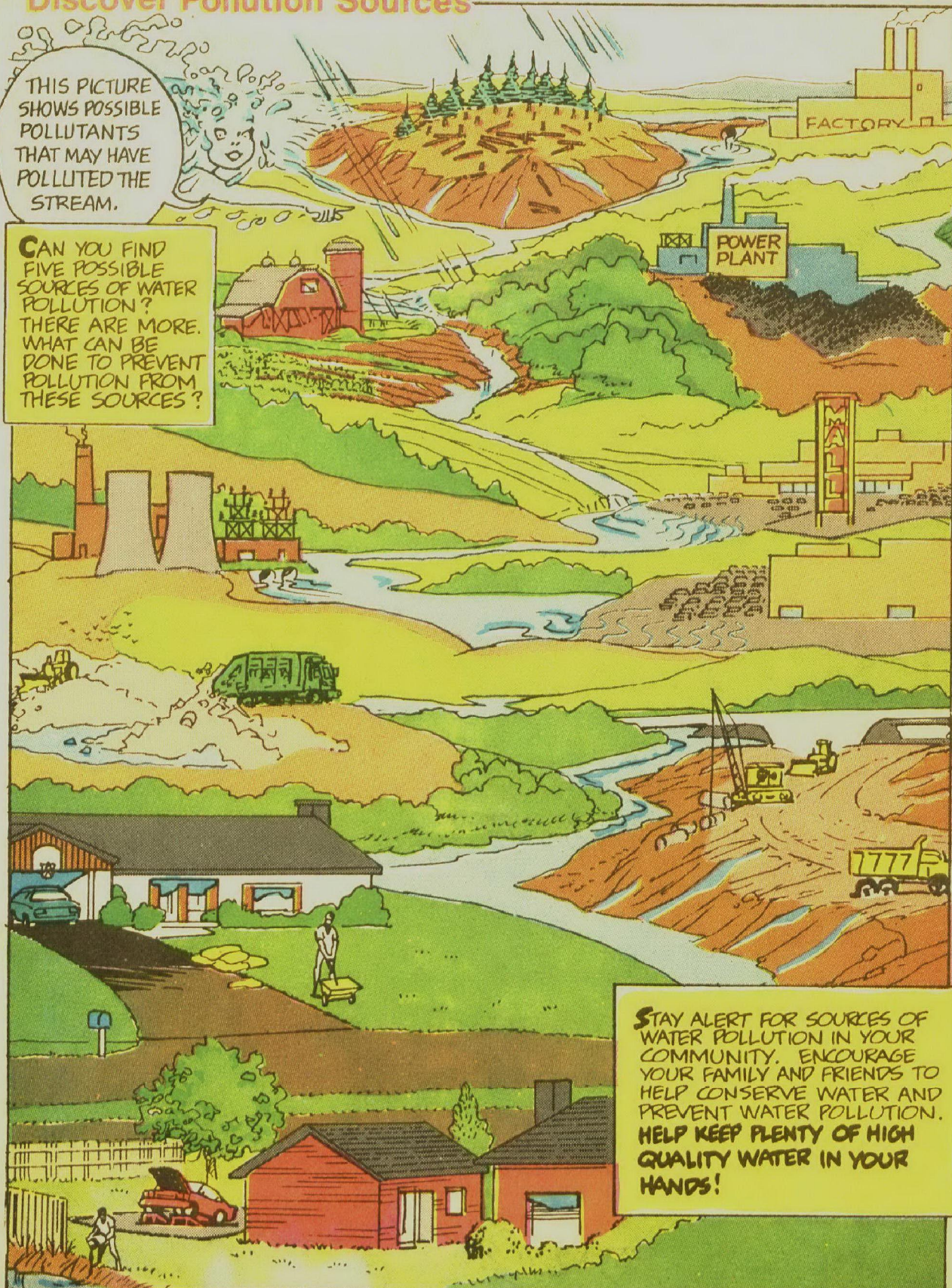
YEAH, WE DID HAVE
A HELPING HAND?



Discover Pollution Sources

THIS PICTURE SHOWS POSSIBLE POLLUTANTS THAT MAY HAVE POLLUTED THE STREAM.

CAN YOU FIND FIVE POSSIBLE SOURCES OF WATER POLLUTION? THERE ARE MORE. WHAT CAN BE DONE TO PREVENT POLLUTION FROM THESE SOURCES?



STAY ALERT FOR SOURCES OF WATER POLLUTION IN YOUR COMMUNITY. ENCOURAGE YOUR FAMILY AND FRIENDS TO HELP CONSERVE WATER AND PREVENT WATER POLLUTION. HELP KEEP PLENTY OF HIGH QUALITY WATER IN YOUR HANDS!

ACKNOWLEDGEMENTS : SPECIAL THANKS FOR TECHNICAL, EDUCATIONAL, AND EDITORIAL ADVICE : GERALD R. CALHOUN, ROBIN BLACK EUREY, ROLAND B. GEDDES, HAROLD HENDRICKSON, SUSAN J. MILLER, ELBERT MOORE, PAT PAUL, MICHAEL PUDDISTER, ROSEMARY ROSWELL, N.E. "SKIP" SCHMIDT, ROBERT W. TOOLE, DONALD E. VAN METER, DAYLE WILLIAMSON, AND DON WYSOCKI.