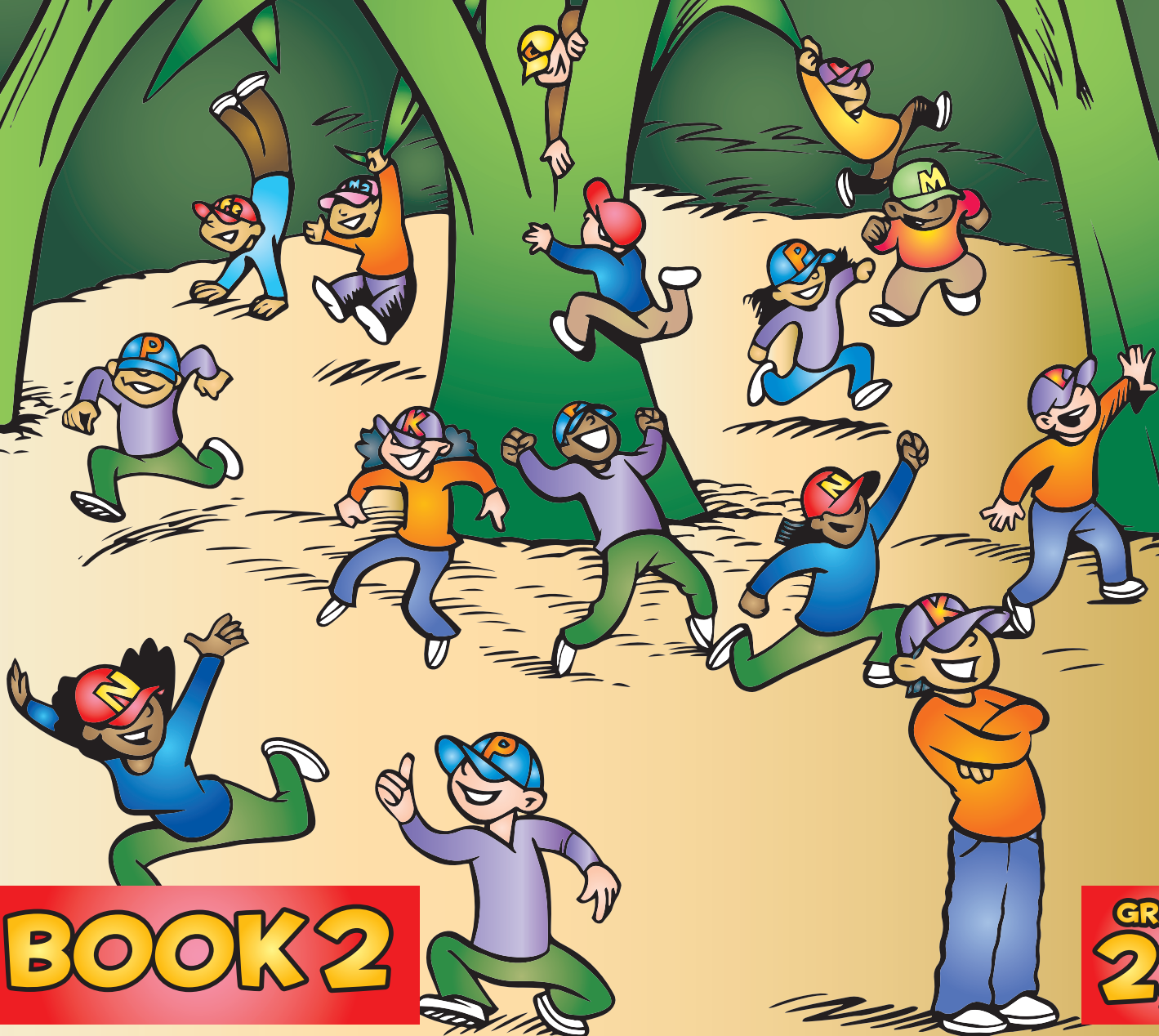


FUN WITH THE PLANT NUTRIENT TEAM



BOOK 2

**GRADE
2,3**

FUN WITH THE PLANT NUTRIENT TEAM

AN ACTIVITY BOOK DEVELOPED
FOR SECOND AND THIRD GRADE.

ILLUSTRATED BY
GREG CRAVENS

Humans, animals, and plants all depend on soil for life. Without soil, we could not grow the food we eat, there would be no place to hold and store the water we drink, and there would be no place for us to build our houses, roads, schools and cities.

Caring for the soil is important to our lives. As the world population increases and more food is needed to feed everyone, knowing what is best for the soil, what is best for the plants, and what is best for the world around us is a necessary part of everyone's education.

Just like people, plants require nutrients to be healthy. When some nutrients are missing, plants do not grow well. Farmers work hard to add just what is needed to grow their crops.

Our **Fun With The Plant Nutrient Team** activity book was written to help children better understand what the soil needs to be healthy in order to provide us with healthy foods.



This publication is produced by the International Plant Nutrition Institute (IPNI). The mission of IPNI is to develop and promote scientific information about the responsible management of plant nutrition for the benefit of the human family. The Institute's programs are conducted by a staff of Ph.D. scientists in various regions, plus other support personnel.

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Text pages printed on
recycled paper

PLANT NUTRIENT TEAM!

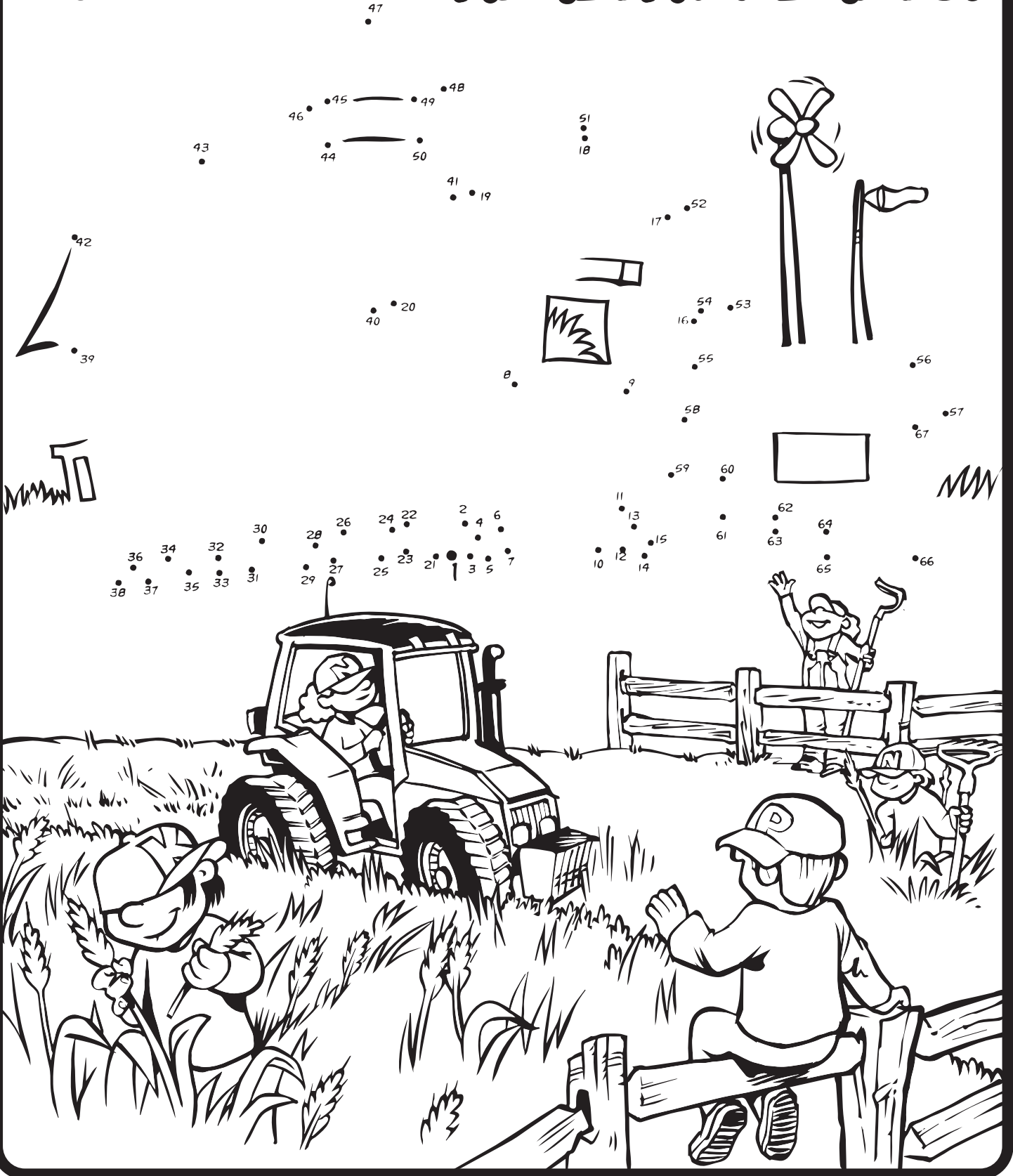
WE ARE THE
SECONDARY NUTRIENTS!

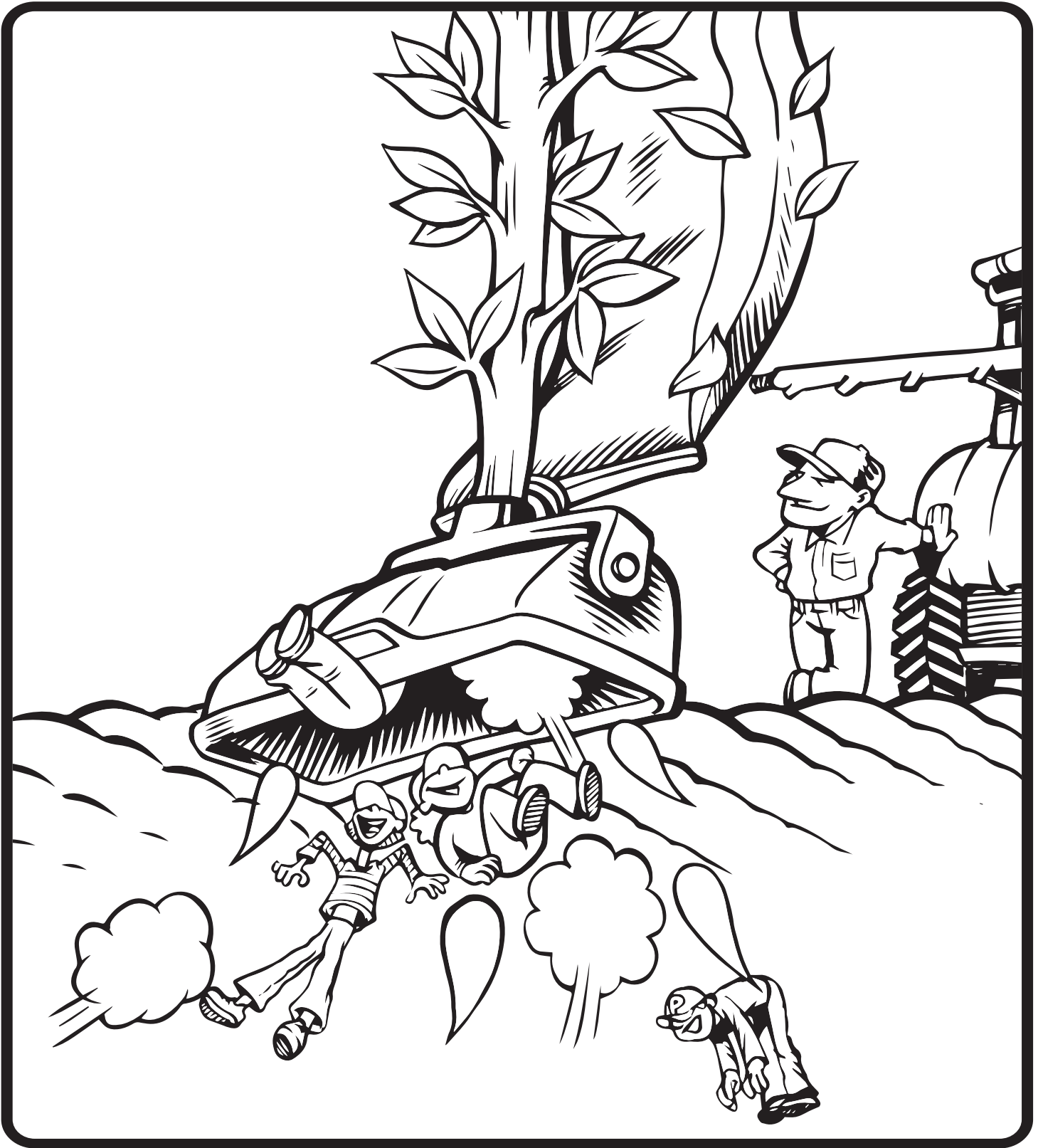
HI! WE ARE THE
PRIMARY NUTRIENTS!

WE ARE THE
MICRO NUTRIENTS!



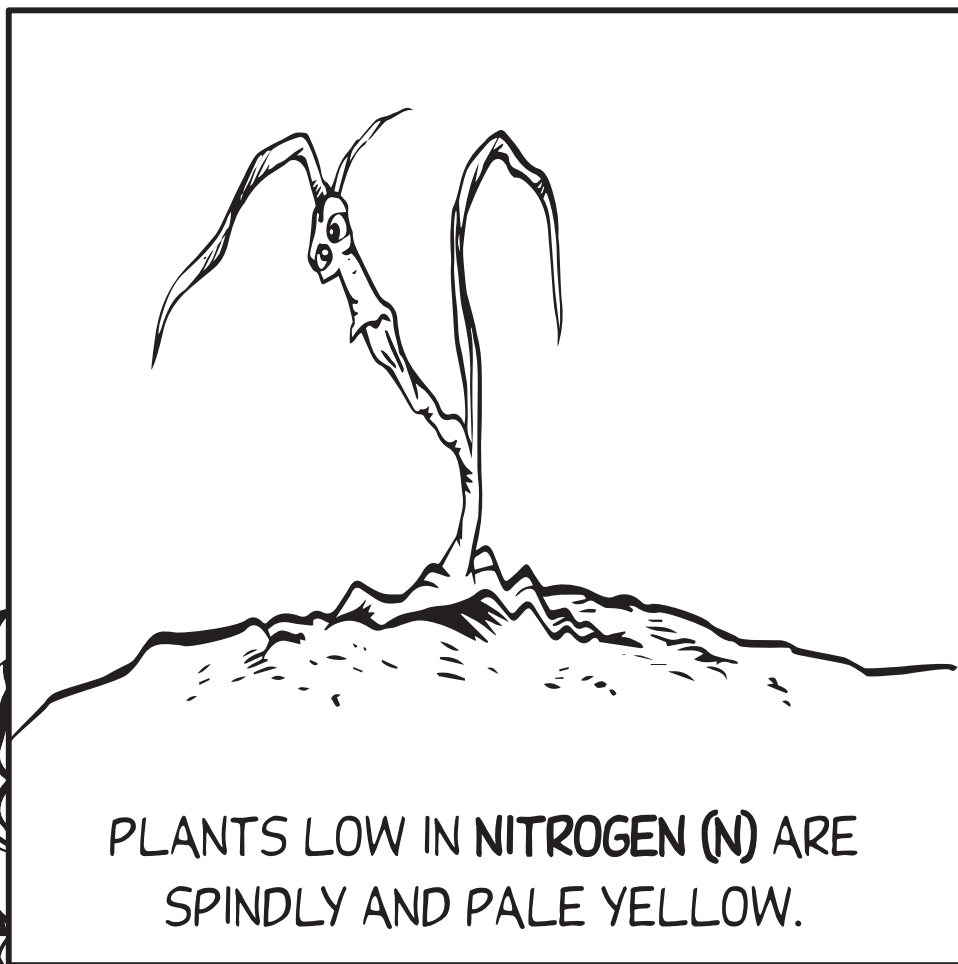
NUTRIENTS LIKE US HELP FARMERS GROW HEALTHY PLANTS!



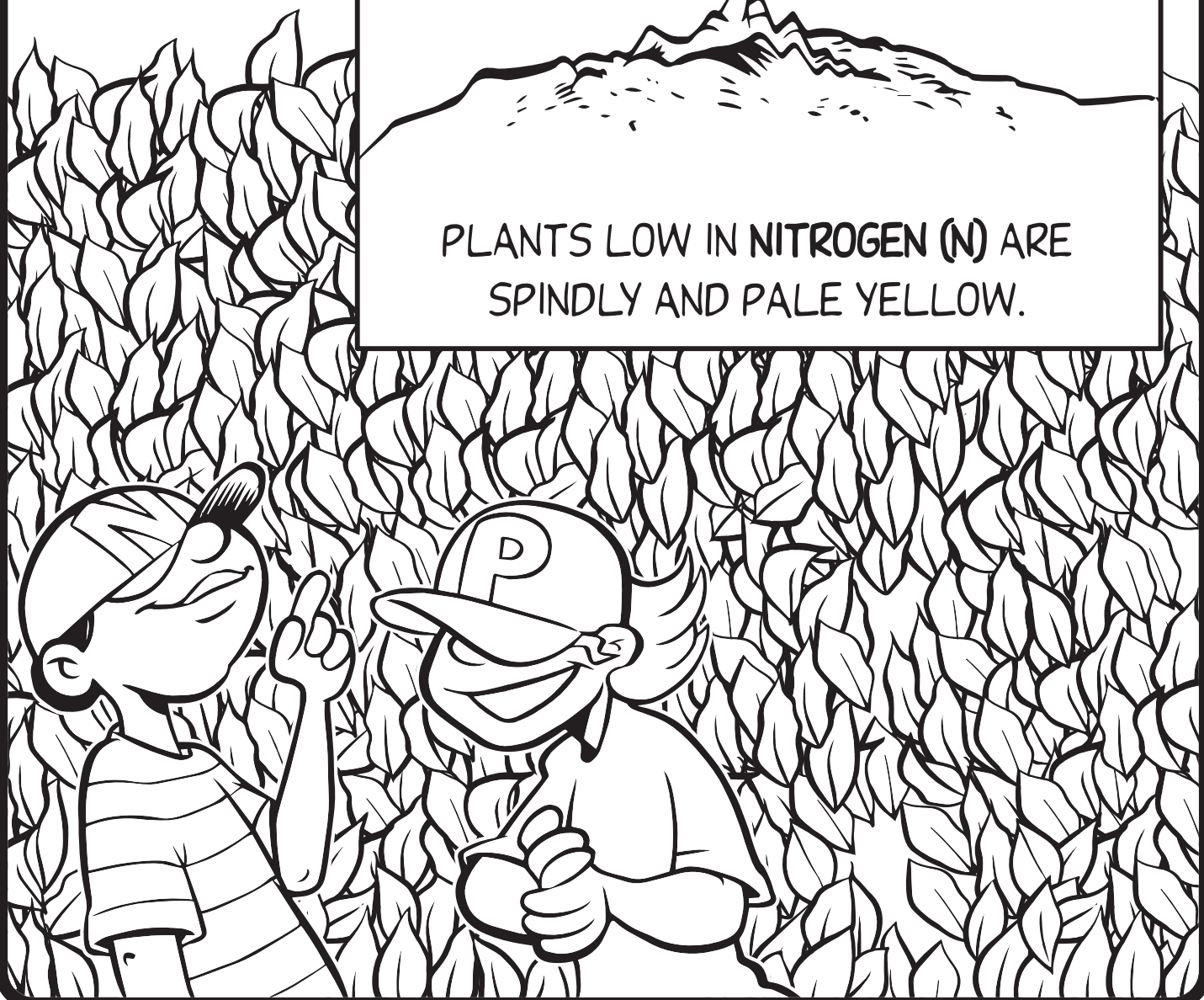


PLANTS NEED PRIMARY NUTRIENTS IN THE LARGEST AMOUNTS.

NITROGEN (N),
PHOSPHORUS (P),
AND POTASSIUM (K)
ARE THE PRIMARY
NUTRIENTS THAT
FARMERS USE.



PLANTS LOW IN NITROGEN (N) ARE
SPINDLY AND PALE YELLOW.





PLANTS LOW IN PHOSPHORUS (P) CAN HAVE PURPLISH LEAVES AND GROW SLOWLY.

I USE THE LETTER 'K' WHICH COMES FROM THE LATIN WORD FOR POTASSIUM ... 'KALIUM'



PLANTS LOW IN POTASSIUM (K) HAVE YELLOW/BROWN LEAVES AND HAVE TROUBLE STANDING UP.



PLANTS USE SMALLER AMOUNTS OF SECONDARY NUTRIENTS.

SULFUR (S),
CALCIUM (Ca), AND
MAGNESIUM (Mg)
ARE THE
SECONDARY
NUTRIENTS.





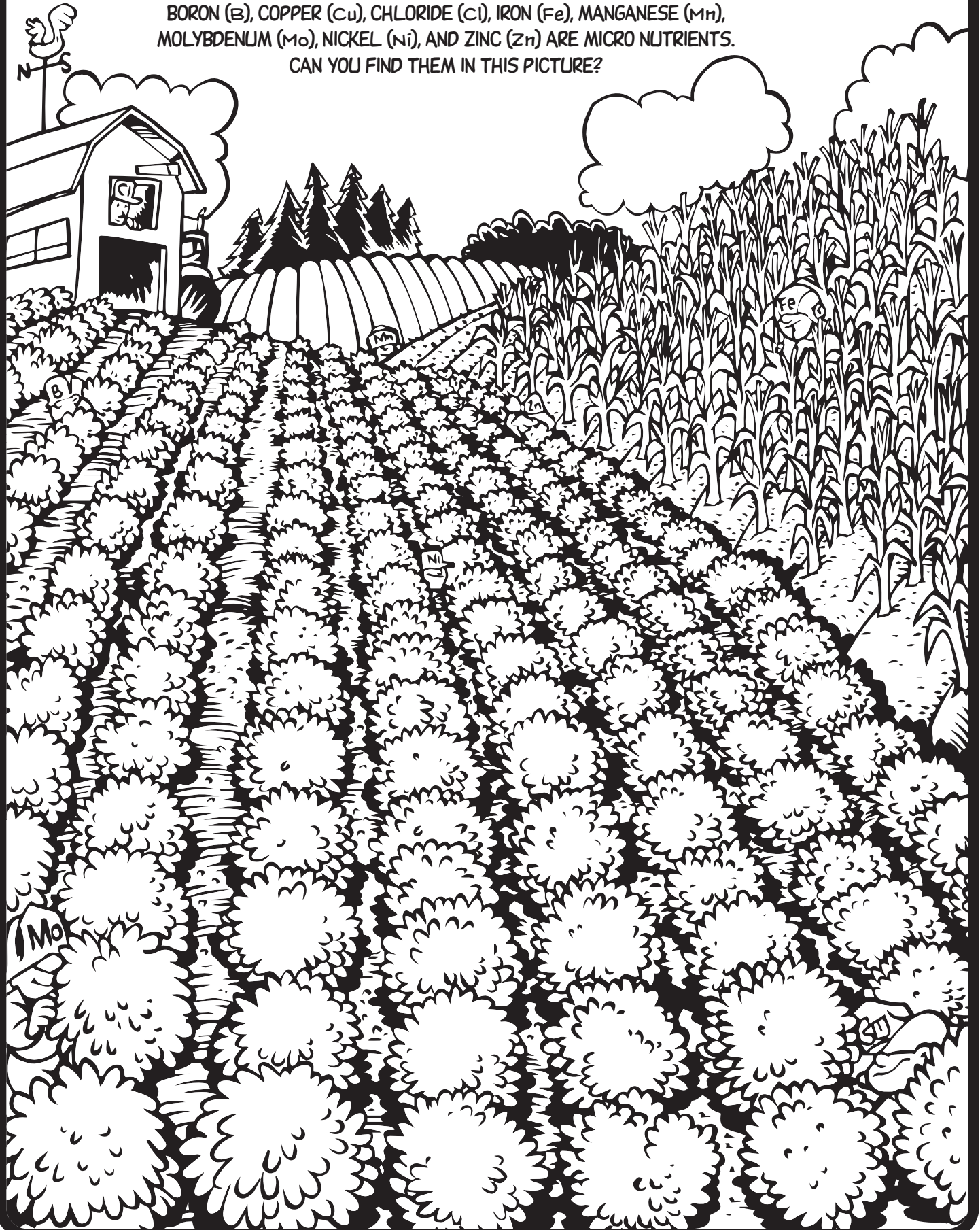
PLANTS LOW IN CALCIUM (Ca)
CAN HAVE POORLY DEVELOPED FRUITS
AND ARE MISSHAPEN.



PLANTS LOW IN MAGNESIUM (Mg) CAN HAVE
LEAVES THAT ARE YELLOW WITH GREEN VEINS.
TIPS OF LEAVES CAN BE REDDISH-PURPLE.

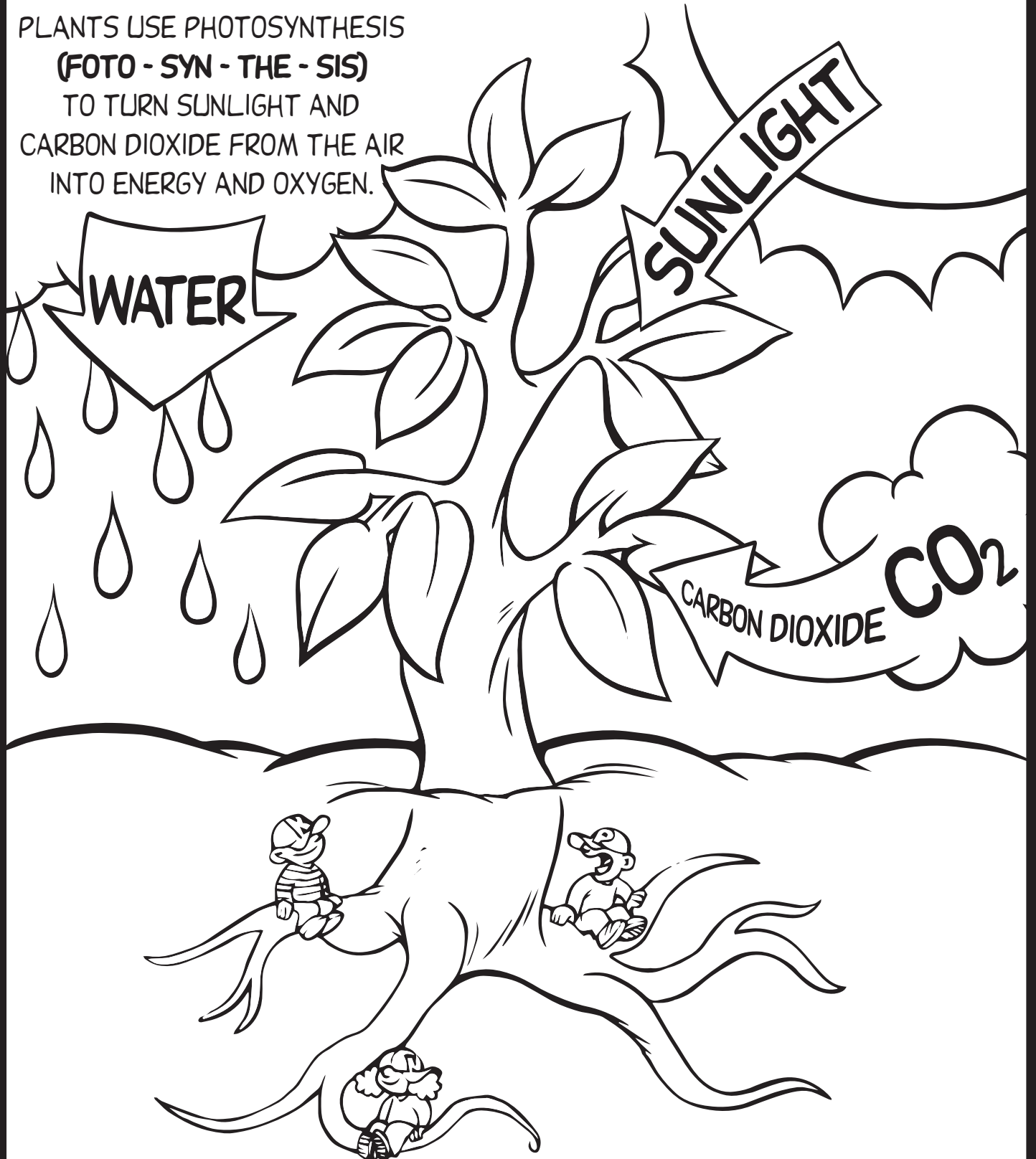


MICRO NUTRIENTS ARE NEEDED BY PLANTS IN TINY AMOUNTS
BORON (B), COPPER (Cu), CHLORIDE (Cl), IRON (Fe), MANGANESE (Mn),
MOLYBDENUM (Mo), NICKEL (Ni), AND ZINC (Zn) ARE MICRO NUTRIENTS.
CAN YOU FIND THEM IN THIS PICTURE?

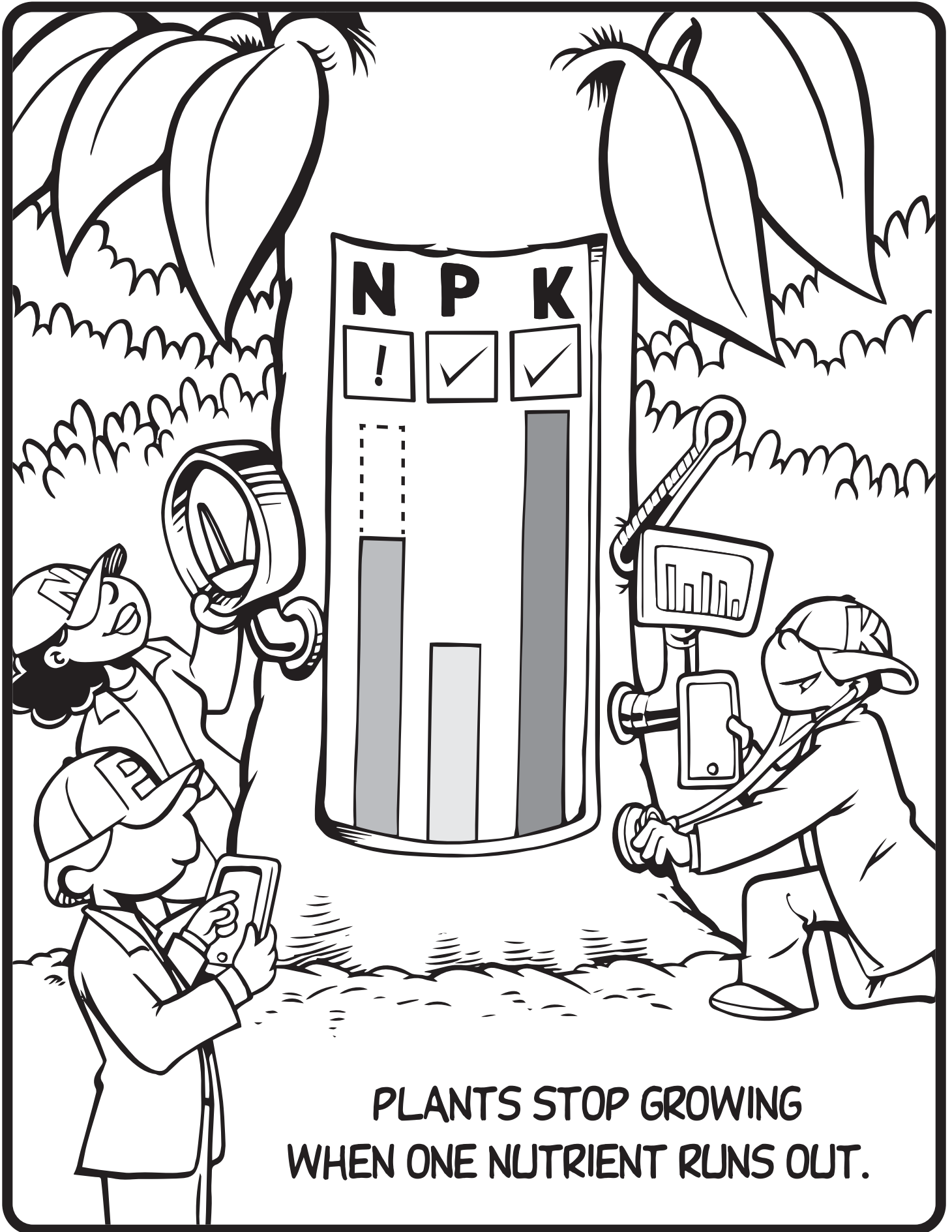


PLANTS NEED A GOOD SUPPLY OF **WATER**, **NUTRIENTS** AND **SUNLIGHT** TO GROW WELL.

PLANTS USE PHOTOSYNTHESIS
(FOTO - SYN - THE - SIS)
TO TURN SUNLIGHT AND
CARBON DIOXIDE FROM THE AIR
INTO ENERGY AND OXYGEN.



PLANT ROOTS ABSORB WATER AND NUTRIENTS



PLANTS STOP GROWING
WHEN ONE NUTRIENT RUNS OUT.

LET'S DO AN EXPERIMENT!

LET'S SEE WHAT HAPPENS TO PLANTS WHEN THEY DO NOT HAVE FOOD AND SUNLIGHT.

- DISTILLED WATER
- SAND
- SUNLIGHT



A.

DESCRIBE THE PLANT

DAY 1 _____

DAY 4 _____

DAY 7 _____

DAY 11 _____

DAY 14 _____

- TAP WATER
- HEALTHY SOIL
- SUNLIGHT



B.

DESCRIBE THE PLANT

DAY 1 _____

DAY 4 _____

DAY 7 _____

DAY 11 _____

DAY 14 _____

- TAP WATER
- SAND
- NO SUNLIGHT



C.

DESCRIBE THE PLANT

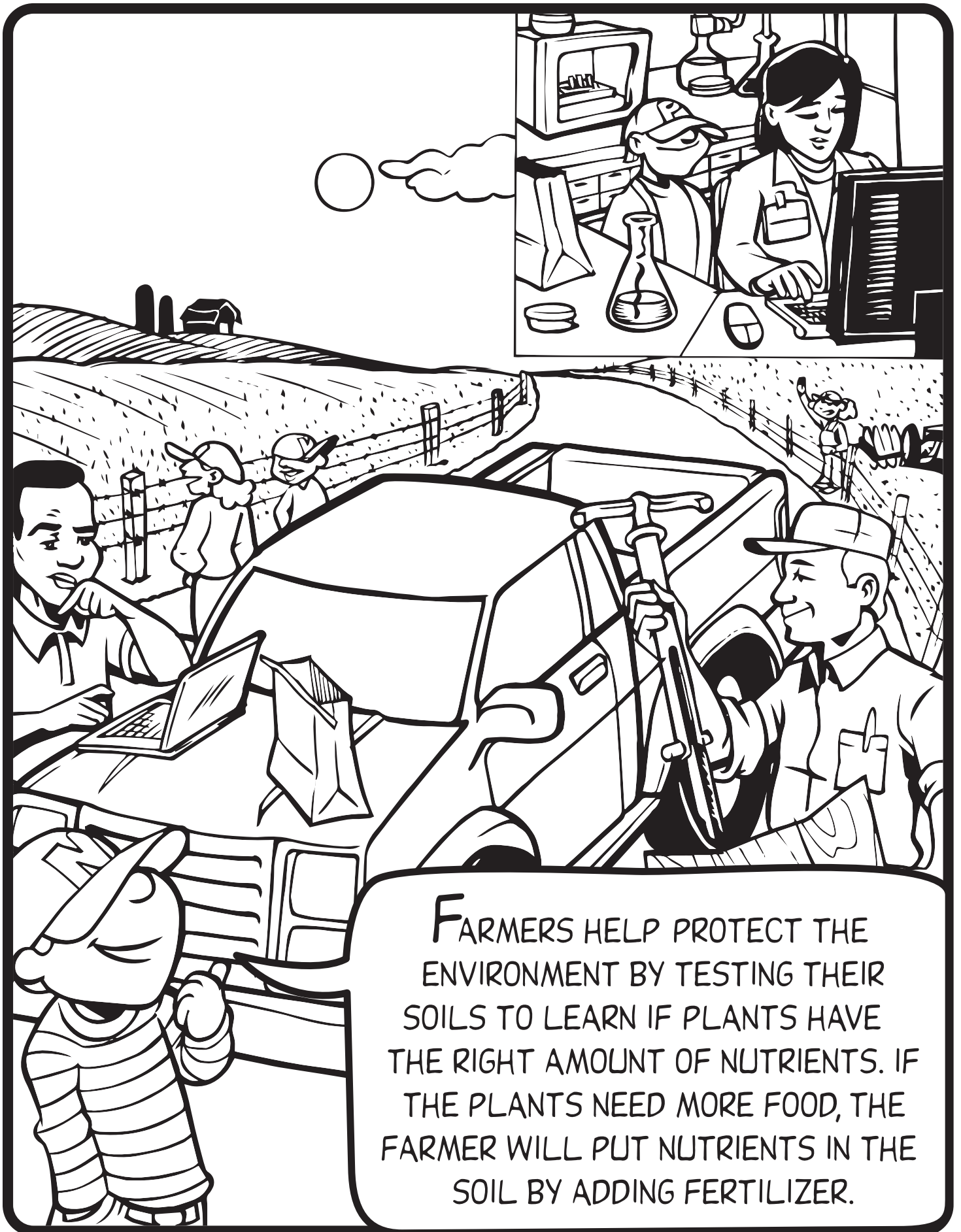
DAY 1 _____

DAY 4 _____

DAY 7 _____

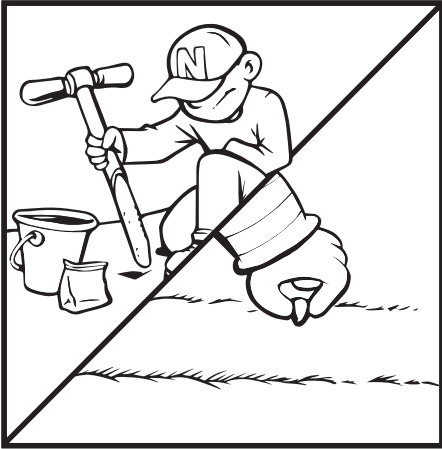
DAY 11 _____

DAY 14 _____

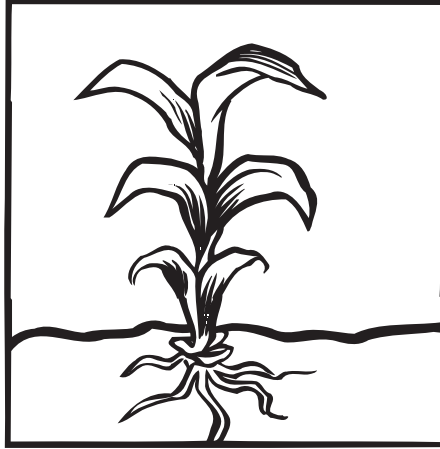


FARMERS HELP PROTECT THE ENVIRONMENT BY TESTING THEIR SOILS TO LEARN IF PLANTS HAVE THE RIGHT AMOUNT OF NUTRIENTS. IF THE PLANTS NEED MORE FOOD, THE FARMER WILL PUT NUTRIENTS IN THE SOIL BY ADDING FERTILIZER.

FARMERS TAKE CARE OF THEIR LAND THAT GROWS OUR FOOD.



SOILS ARE TESTED AND
SEEDS ARE PLANTED



THE SEED
BECOMES A PLANT



FARMERS LOOK
AFTER THEIR CROPS



FOOD GROWS FROM
THE PLANT

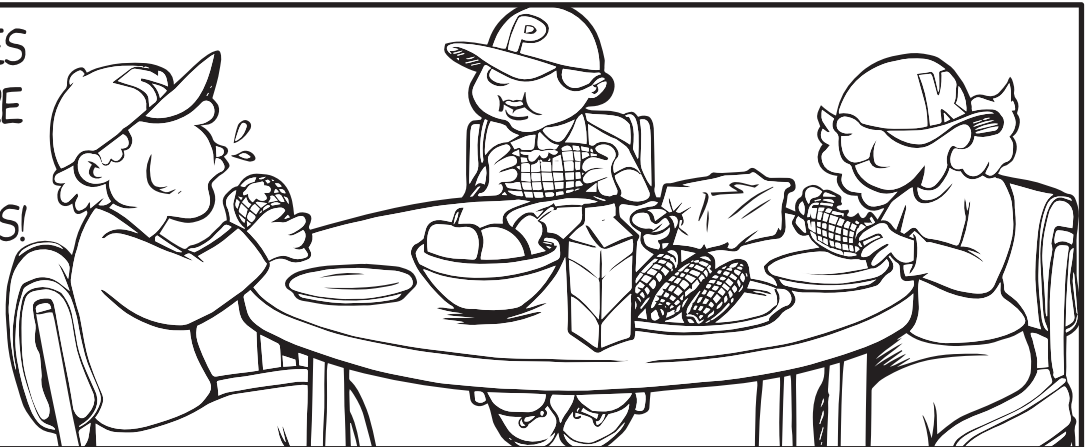


THE PLANTS ARE
HARVESTED



THE FOOD FROM THE
PLANT GOES TO
THE STORE

THE FOOD COMES
FROM THE STORE
TO OUR HOMES-
AND OUR TABLES!



FARMERS USE THE BEST TECHNOLOGY TO
HELP THEM PUT THE RIGHT AMOUNT OF
NUTRIENT IN THE RIGHT PLACE.



HELP US FIND THESE WORDS HIDDEN IN THE COMPUTER!

THE WORDS ARE:

SOIL

SEED

NUTRIENTS

FERTILIZER

FOOD

WATER

FARMER

HARVEST

CROP

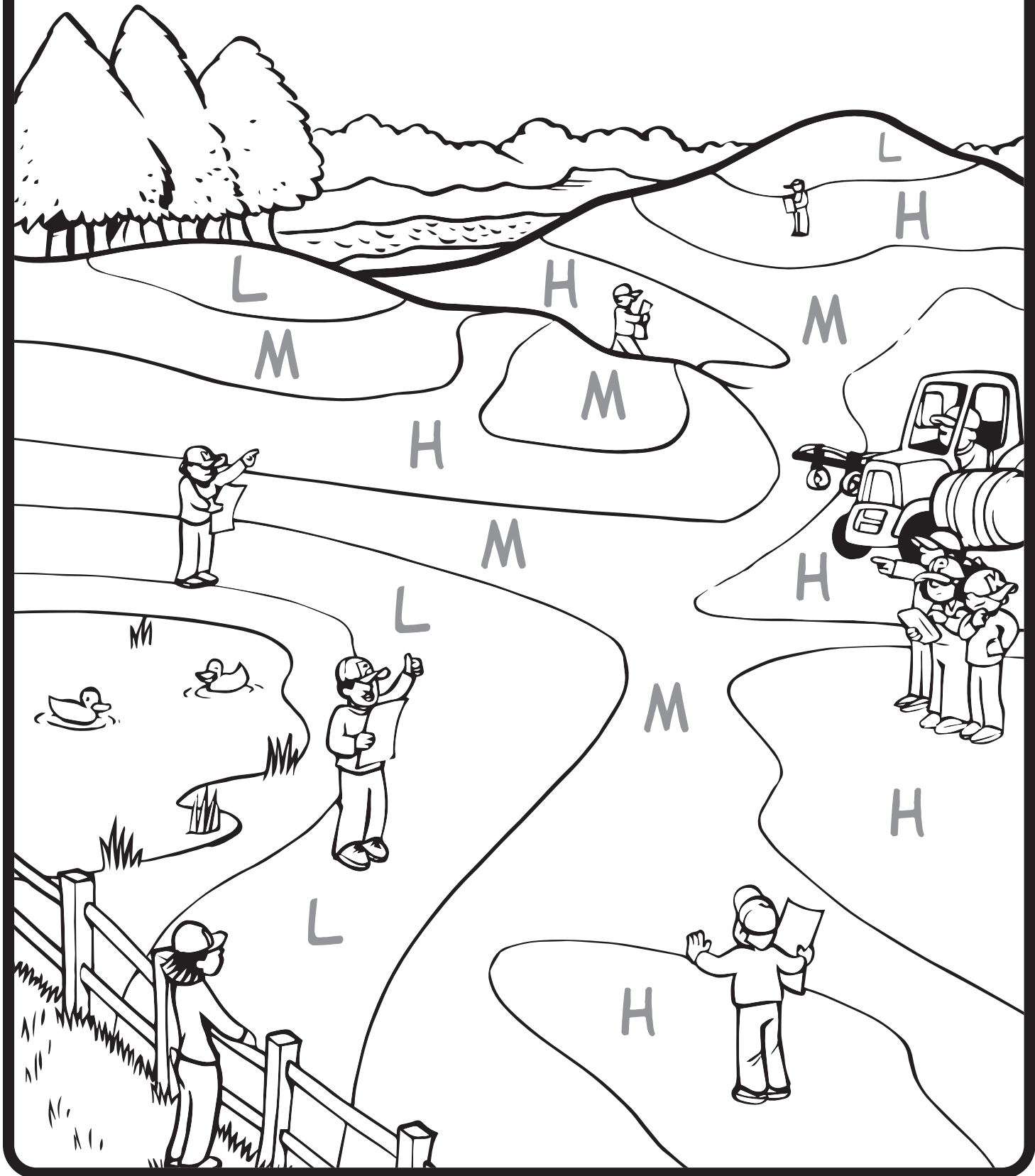
SCIENCE



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

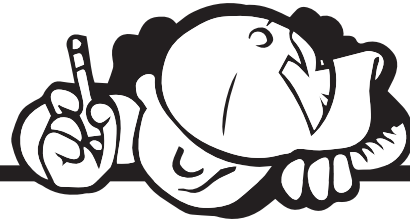


DIFFERENT AREAS OF THE FARMER'S FIELD GET DIFFERENT AMOUNTS OF FERTILIZER.
COLOR THE FIELDS BELOW. "H" IS FOR HIGH AMOUNTS OF FERTILIZER.
"M" IS FOR MEDIUM AMOUNTS OF FERTILIZER.
"L" IS FOR AREAS THAT ONLY NEED LOW AMOUNTS OF FERTILIZER.



THERE'S A SECRET MESSAGE BELOW-
 USE THIS DECODER TO FIGURE OUT WHAT IT IS!

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26



14 21 20 18 9 5 14 20 19

6 15 18

8 5 1 12 20 8 25

16 12 1 14 20 19

6 15 15 4

1 14 4

16 5 15 16 12 5





**FUN WITH THE
PLANT
NUTRIENT
TEAM**

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