

The Mae M. Burgess Corn Project

Directions:

- Help children plant 2-3 kernels in their pots.
- Plants can be thinned later to the 1 or 2 healthiest.
- Extra corn may be sent home for planting (see attached letter)

Dear Teachers of Grades K and 1,

Here are your materials for the Mae M. Burgess corn-planting project, sponsored by the Garden Club of Greater Lansing. Mae Burgess was a gardener who cared deeply about children. Through her efforts, the Corn Project was born and flourished in Lansing area schools. Since her death in December 1997, the Garden Club of Greater Lansing has assumed her commitment to carry on this project.

Thank you for your participation and efforts as teachers.

Please also join us in conveying special thanks to the following sponsors. We could not do this huge project without their support:

Mr. George Van Atta of Van Atta's Greenhouse, 9008 Old M-78, Haslett, Michigan 48840. His belief in the value of our project and commitment to young gardeners is enormous. He invites you to visit him (He encourages school tours in April or June, not May. It is his busiest month.) Please write letters with your students to thank him for donating the hundreds of pots and media used by students each year. Students and their families are invited to visit him all summer to see his Mini-zoo.

A special "thank you" also goes to Mr. Keith Dysinger, MSU Crop Science, 4450 Beaumont Road, East Lansing, Michigan 48824. He donates all the seed corn every year and is also very enthusiastic about Mae's project.

Both of these men really enjoy receiving letters and drawings from young students about their plants. We hope your class finds time to write to them.

HAPPY PLANTING! HAPPY SPRING!

Sincerely yours,

Barbara Ann Jones and Reba Torongo
For the Garden Club of Greater Lansing

**THE GARDEN CLUB OF GREATER LANSING
MAE BURGESS JUNIOR GARDENING PROJECT**

IMPORTANT:

PLEASE RETURN THIS CORN PROJECT INFORMATION TO THE PRINCIPAL'S OFFICE.
KEEP FOR ANOTHER YEAR!

Kit contains:

- 1) Kindergarten & Grade 1 packets of untreated corn seed.
- 2) Pots and growing medium.
- 3) Information sheets (please feel free to reproduce):
 - a) Activity sheets.
 - b) Letter to parents.
 - c) Evaluation sheets (please return); one from each teacher involved, with observations and suggestions.
- 4) Concepts (see "visual sheets:")
 - a) Kindergarten - What is a seed? Grade 1 - Compare seeds to bulbs. Both - What is inside a seed?
 - b) Kindergarten - What does a plant look like? Grade 1 - Names of plant parts (stem, leaf, etc.) Both - How are plants different from animals, insects, etc?
 - c) Kindergarten - Needs of a plant? Grade 1 - What happens if needs aren't met (withhold water, light, etc?)
 - d) Both - What products do we get from plants?
- 5) Directions for planting:
 - a) Poke holes in soil with pencil.
 - b) Plant seeds $\frac{1}{2}$ - 1 inch deep.
 - c) Keep moist, but not soggy.
 - d) "One for the cut worm, one for the crow, one for the gopher, one to grow." - Old saying.
- 6) Follow up activities:
 - a) Make a book showing process from seed to plant.
 - b) Compare Kindergarten with Grade 1 corn growth - measure & keep record sheet.
 - c) Compare corn vs. lima bean growth.
 - d) Compare corn vs. lima bean seeds with a variety of seeds: size, shape, color, texture, etc.
 - e) Soak dried lima beans & let children "open" them along "seam" to find miniature plant inside.
 - f) Make corn fritters, corn muffins, corn bread, popcorn (grind corn, if possible.)
 - g) Visit MSU to:
 - i) See corn & other plant growing (June.)
 - ii) See animals that eat corn.
 - h) Discuss wild birds & animals that eat corn.
 - i) Make milk carton bird feeders.
 - j) Make seed mosaics on cardboard or in jar lids as "coasters."
 - k) Start a tree from seed (see project sheet.)

The Federated Garden Clubs of Michigan's State President's Project for her term of office is planting sunflowers with children. Please have the children plant these seeds near your school along with some corn because....

It's true!

Did you know that matching sunflowers with corn helped increase the corn's yield and helped reduce fall armyworm? AND that insect problems on the sunflowers were cut in half?

The Garden Club of Greater Lansing
Mae Burgess Junior Gardening Project
in cooperation with your child's school

Dear Parents:

As a part of a classroom activity, your child is bringing home two corn seeds today. Two have already been planted at school. This is an experiment whereby your child can compare growth in an artificial environment at school and the growth in natural "open air" soil.

Would you please assist your child in the planting process? There is no need to be concerned about the safety of handling the kernels, they have not been treated with fungicides. Keep in mind that these plants do grow very tall, and while your child may want to plant the seeds in a prominent spot, it may look odd, come July, to have a six foot cornstalk in that chosen spot.

We encourage you to help your child to select a sunny spot where it will fit in with your home landscape. If you find it difficult to locate the right place, perhaps your child can join with a friend who has more room.

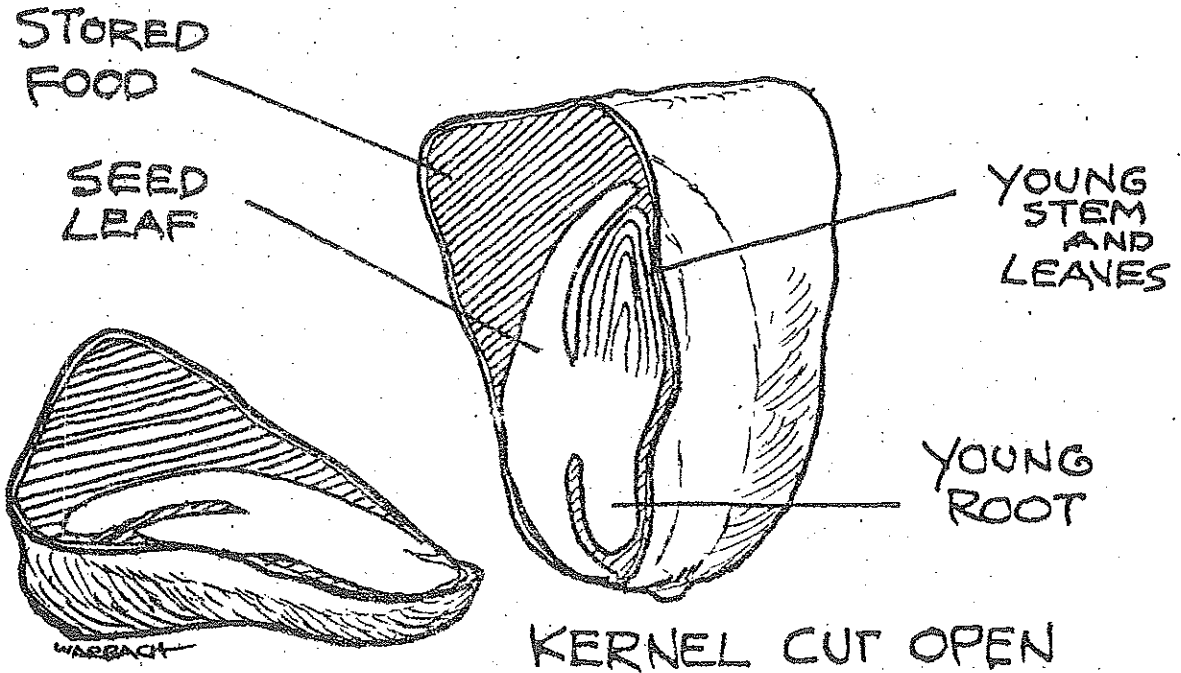
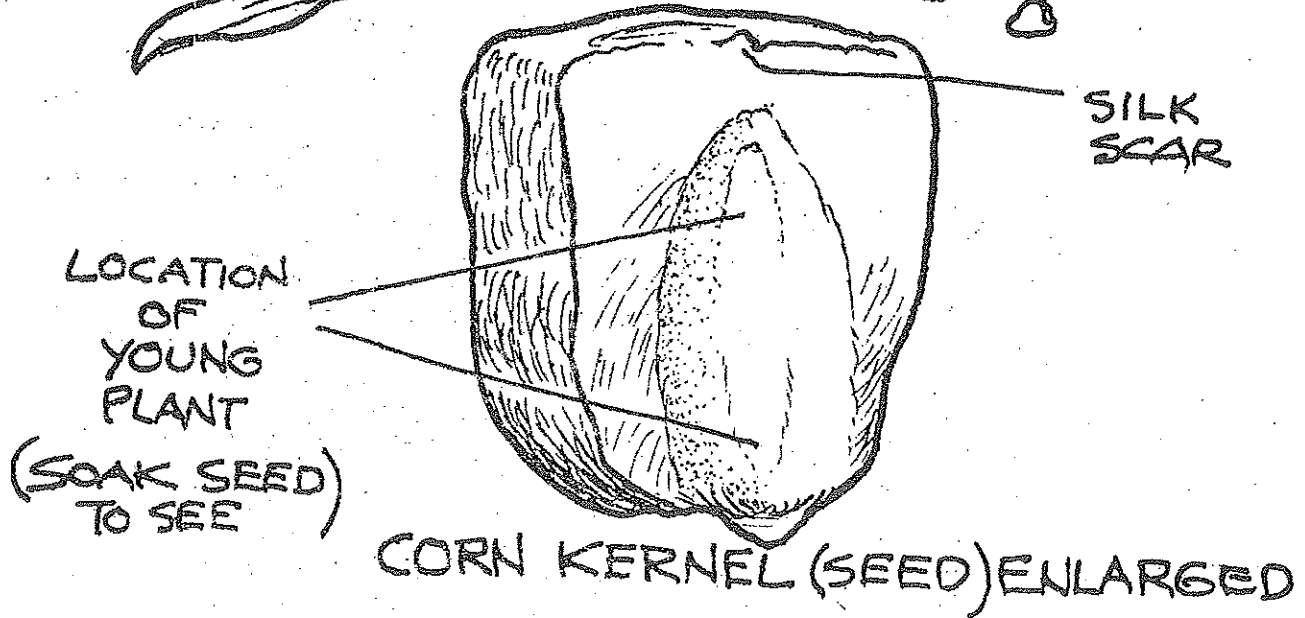
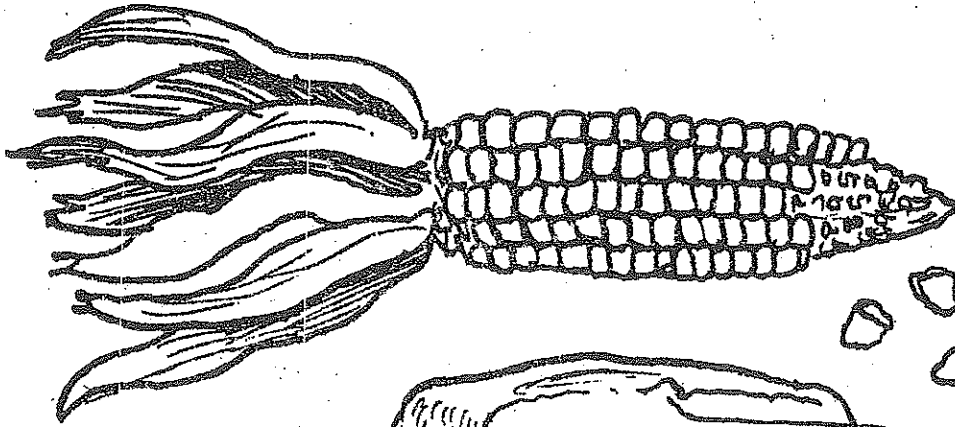
GUIDE TO PARENTS:

1. Plant the corn kernels in a sunny place.
2. Water when the soil gets dry and mulch (grass clippings, sawdust, etc.) to tide it over dry spells.
3. Work a handful of fertilizer, 5-10-5 or 5-10-10, into the soil before planting and repeat when it is knee high.
4. Watch your child's plant grow.
5. Shake plants gently when tassels appear for pollination so kernels will form. This task could be done every other day for several weeks.

Thank you for your support in this project.

Teacher

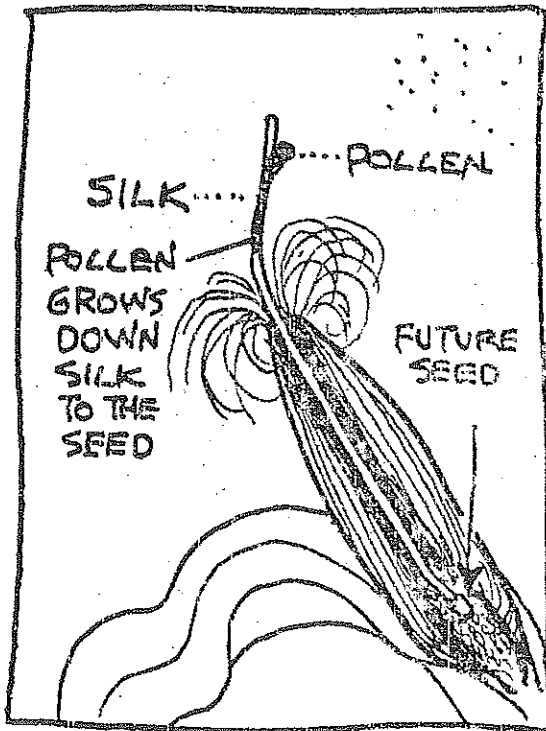
CORN SEED



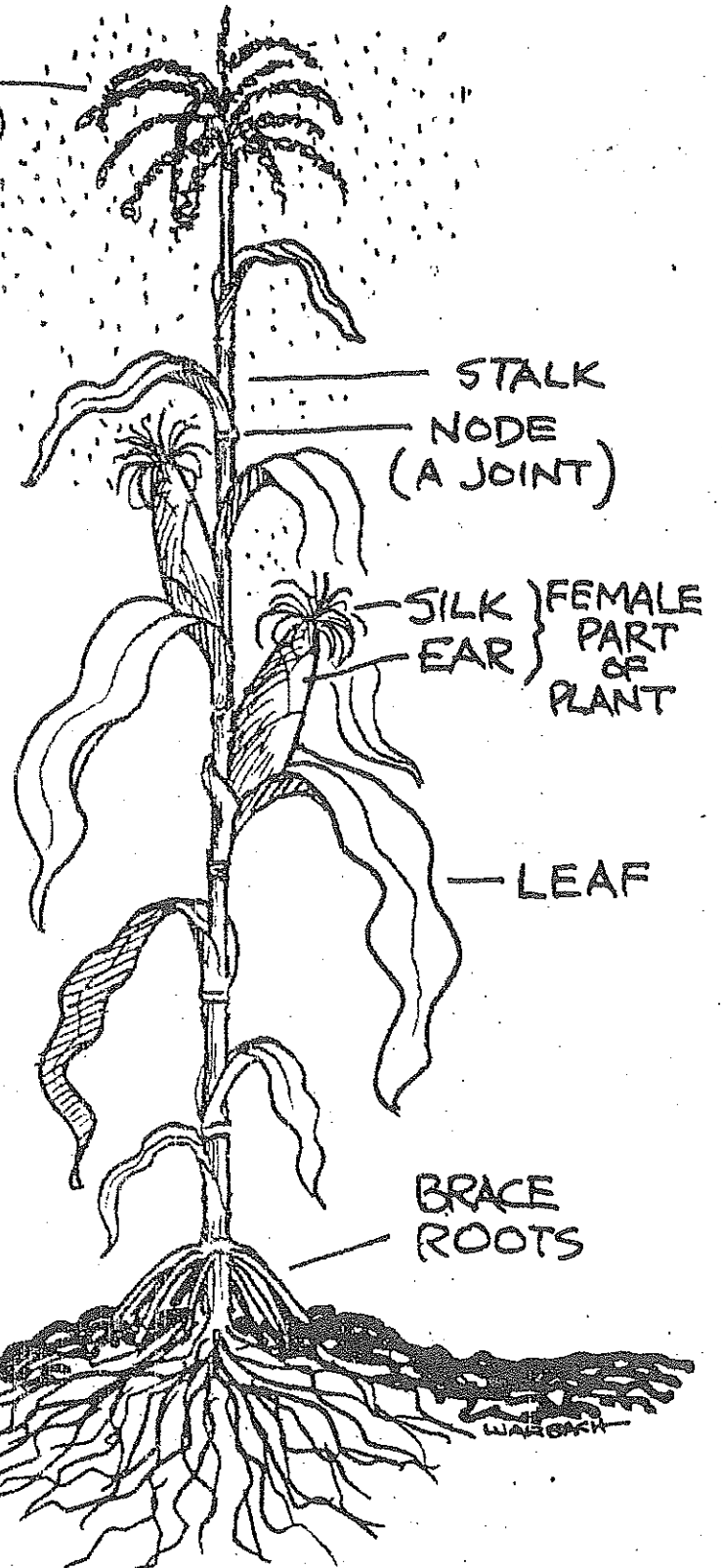
CORN PLANT

TASSEL
(MALE PART OF PLANT)

POLLEN

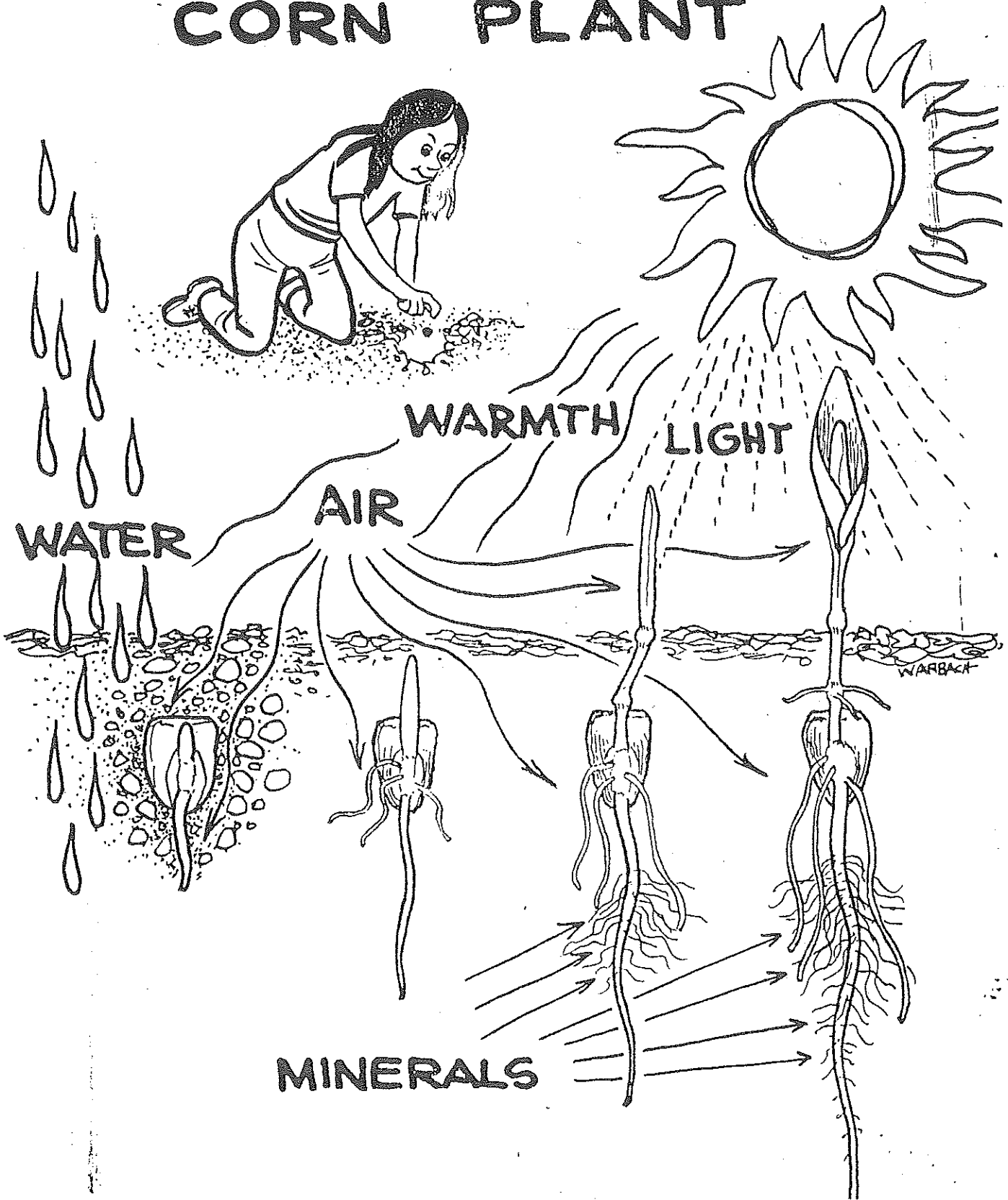


YOUNG EAR - ONE
POLLEN AND SILK GREATLY
MAGNIFIED.



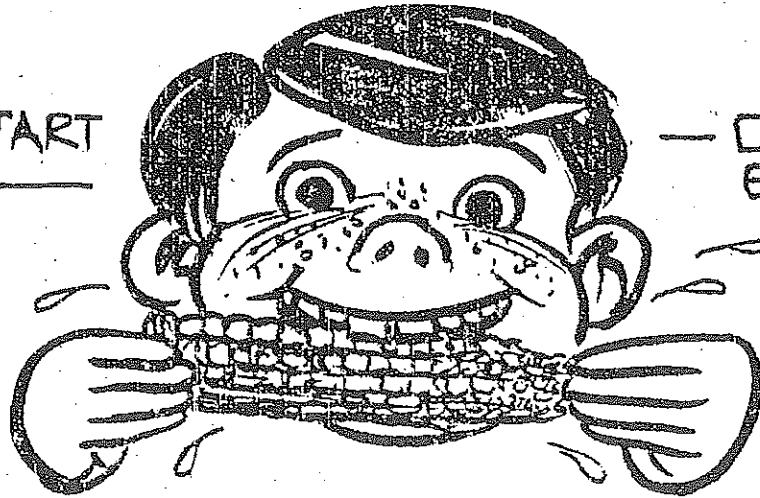
ROOTS

NEEDS OF THE CORN PLANT



CORN PRODUCTS

LET'S START
WITH _____

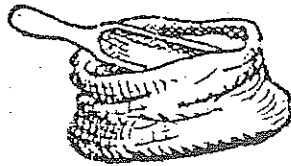


— DELICIOUS
EAR CORN.

● OTHER FOODS FOR US.



POPCORN



CORN FLOUR



CORN MEAL



CORN OIL



CORN SYRUP



CORN CEREAL



SUGAR

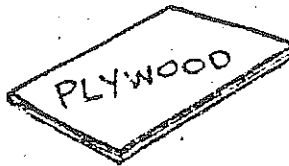


CORN STARCH

● NON-FOODS.



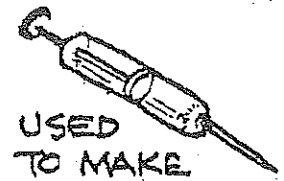
ALCOHOL



GLUE



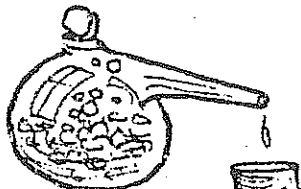
BABY POWDER



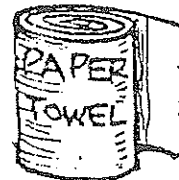
USED
TO MAKE
ANTI-BIOTICS



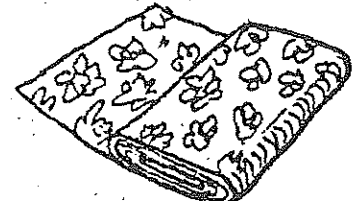
COATINGS



PRODUCTION
OF
ENZYMES



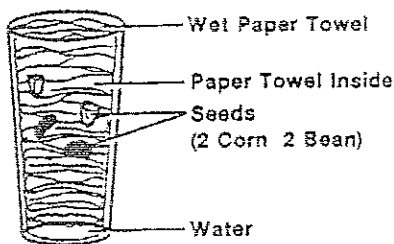
INCREASING
WET STRENGTH



SIZING OF
TEXTILES

- that corn seeds will sprout and grow whichever way they are placed in the soil
- that a small amount of food for the young plant is contained in the corn kernel.
- that moisture from the soil and heat from the sun makes the corn kernel sprout and grow.
- that corn grown in a field will not angle toward the sun, but grown in a greenhouse, it will lean toward the sun.
- that some farmers chop (with a machine) the green corn plant to make "silage" usually placed in a silo, then it is fed to farm animals.
- that before "tasseling," the corn plant will erect itself if it is bent, but after tasseling, it will not be able to do so.
- that there is no guarantee of the size of the ear; generally in dry seasons, the ears are smaller, and in rainy seasons, the ears are larger.
- that in colonial times, "skips" (where corn didn't come up) were planted with pumpkins, squash, beans, etc. to utilize the space.
- that the word, "corny" is derived from the same expression as was "hay seed" -- relating to common products in farm life.

Direction of Plant Growth



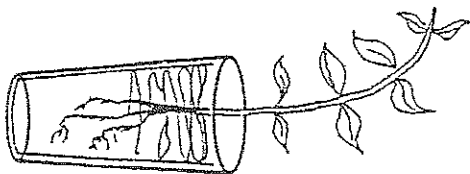
A. Plant Tops

1. Grow a plant in a pot or use an available potted plant.
2. Place plant near a window on the sunny side of the house.
3. For a period of 10 days, make note of whether the tips lean toward or away from the window.
4. Turn the plant half-way around.
5. Now which way do they lean—toward or away from the window?

Keep records for 10 days of observation.

Use towels to keep the first towel firmly against the sides of the tumbler.

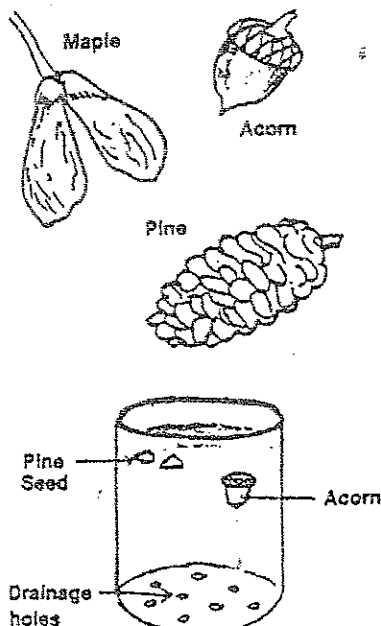
5. Slip two beans and two corn seeds between the tumbler and the first towel.
6. Place the tumbler where it can get indirect sunlight. Watch daily.
7. When the roots become 2 to 3 inches long, lay the glass on its side as illustrated.
8. Record your observations on the direction of growth and the roots and the stem for 10 days. Remember to keep the paper towel moist.
9. Explain your findings.



B. Plant Roots

1. Select a tall, clear plastic tumbler.
2. Line the sides and bottom with a paper towel.
3. Add water to wet the towel and leave extra water on the bottom. Keep water in bottom of tumbler.

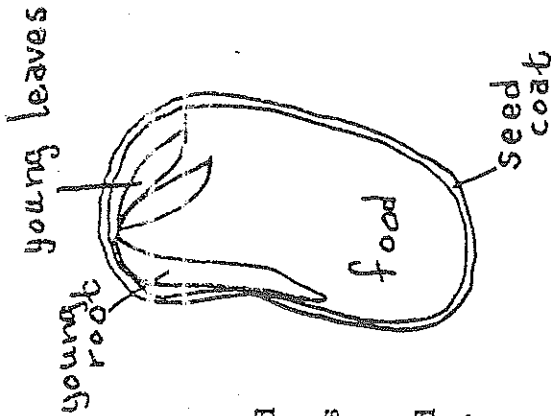
Start a Tree from Seed



1. Select a tree common to your area, such as maple, oak, pine or spruce.
2. When the seed or seed pods turn brown, collect a few.
3. Spread seed in the sun to dry.
4. Store dried seed in an airtight jar in a refrigerator until ready to plant. NOTE: Pine, spruce and some maples can be planted at once. Sugar maple, for example, usually does not germinate until the next spring.
5. Select a planter such as a flower-pot, can or the lower three inches of a milk carton. Make drain holes with a large nail.
6. Fill planter with a moist mixture of equal parts sand and peat moss; sand and vermiculite, or a good garden soil.
7. Plant 2-4 seeds. Plant the smaller ones 1/4" deep; larger seeds 1" deep.
8. Add water slowly until it begins to drain from the planter.
9. Place the planter in a warm lighted place, but not in direct sunlight.
10. Keep the surface soil moist. You can control moisture by enclosing your planter in a clear plastic bag.
11. Observe and record when the young plants appear and how fast they grow. You can use the project record sheet in the back of this manual to record your findings.
12. After you have completed this exercise you will have a seedling tree for planting.

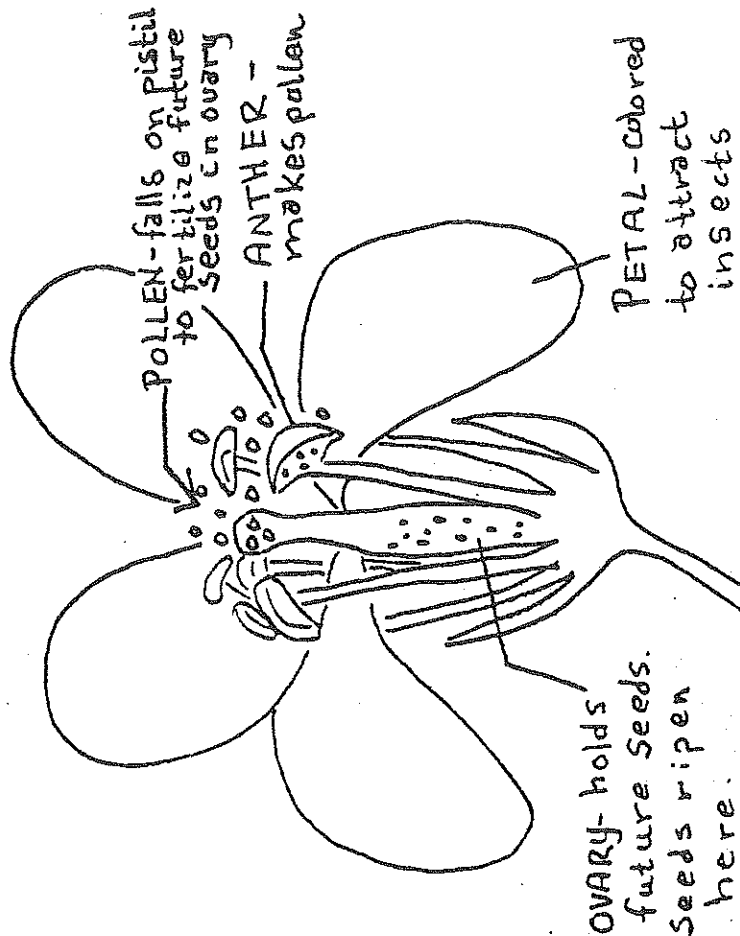
WHAT IS A SEED?

A seed is really a very young plant which has not begun to grow yet. The young plant is called an embryo. The seed has food stored for the young plant to use. A seed coat covers the young plant and keeps it from drying out. Here is a picture of a bean seed which has been cut in half.

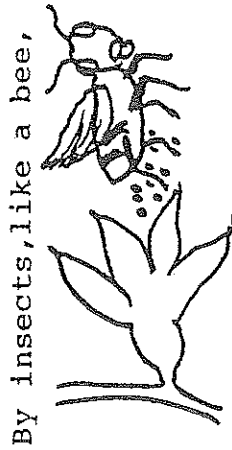


WHERE DO SEEDS COME FROM?

Seeds come from the parts of a flower. Look at the picture below.

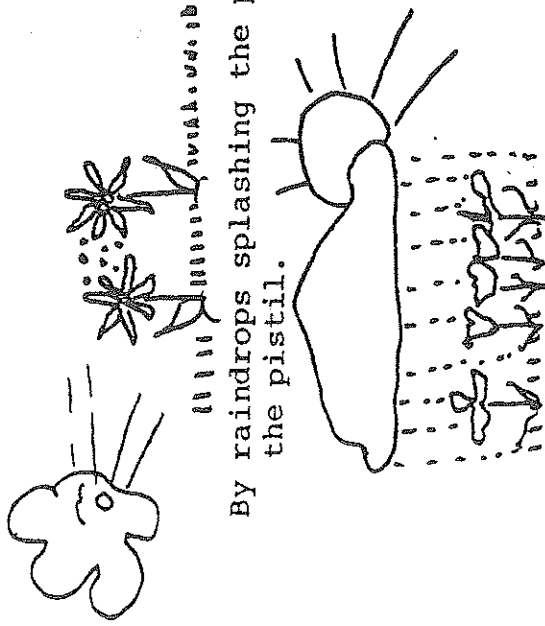


When you look at the picture of the flower, you can see that the pollen must travel from one part of the flower (the anther) to another part (the pistil). This is called pollination. Pollination must happen before seeds can be made. How can a flower be pollinated?



By insects, like a bee,

By the wind blowing the pollen,



By raindrops splashing the pollen onto the pistil.

After pollination, several months must pass while the seeds ripen and mature. Then seeds are ready to plant. The pollen grain unites with an egg (future seed) inside the pistil. This is called fertilization.

Grow It Yourself Popcorn

Popcorn, a gift from the Indians, was introduced to the Pilgrims at the first Thanksgiving.

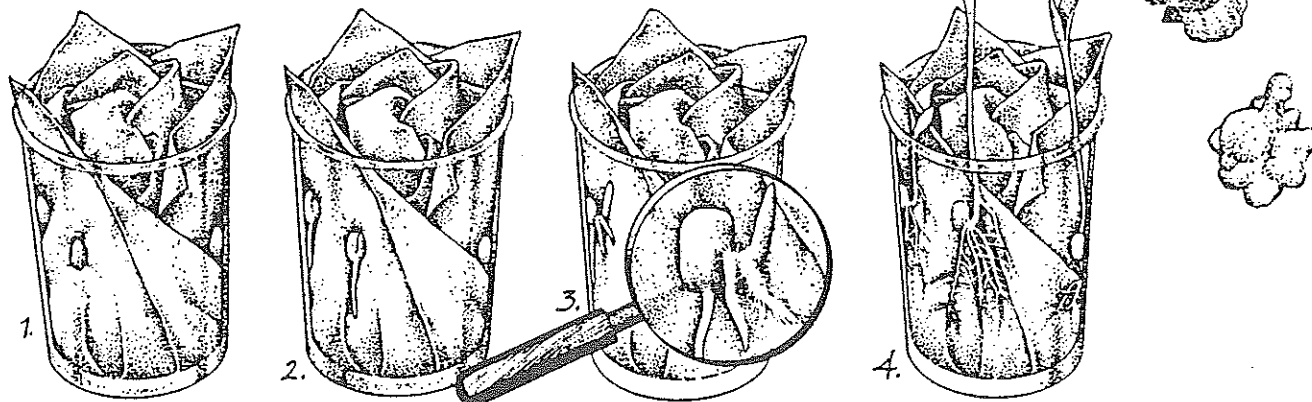
The popcorn kernel is the seed of a new corn plant. The water sealed inside makes the corn pop. If the kernel is heated to a high temperature quickly, the water changes to steam and explodes.

Stale popcorn doesn't pop well. An Experiment Station scientist discovered how to keep popcorn fresh by keeping the moisture at just the right level. This method revolutionized the popcorn industry. The method will work for you at home, too.

Cut a 3 inch by 4 inch piece of blotter paper. Soak this paper in a saturated salt solution. (To make the solution, dissolve salt in a cup or two of water. Keep adding more salt until no more will dissolve.) Roll the paper up. Tie this roll with a piece of string. Place this "plug" into your storage jar of popcorn. Keep the jar sealed with a lid.

It's easy to grow a popcorn plant, and when you grow popcorn, you're growing the oldest type of corn there is.

1. Soak some popcorn kernels in water overnight. Line a glass or jar that you can see through with a paper towel. Stuff the inside of the glass with more towels. Soak the paper well. Place the soaked seeds between the glass and the paper. Place in a warm spot.
2. In 3 to 5 days, you will see a small root emerging. The next day you should see a small shoot growing. This will become the stem and leaves.
3. Look closely and you can see tiny hairs coming out of the roots. These hairs carry water to the root.
4. The first leaves will appear next, and you now have a popcorn plant. If you have space, you may now plant it outside.

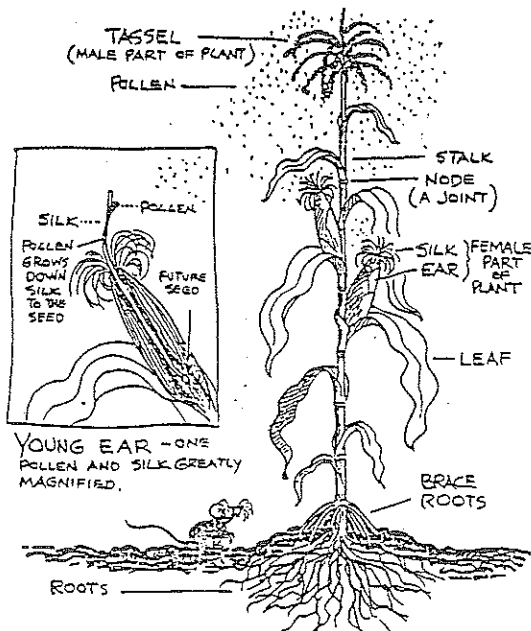


POPCORN

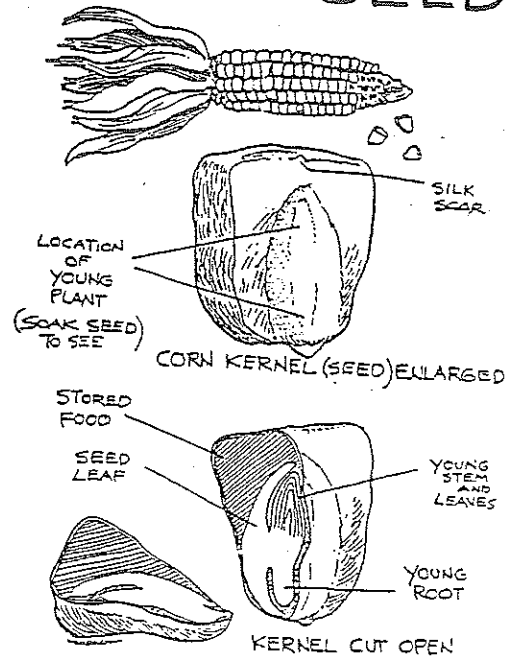
Popcorn has been around for a very long time. Kernels have been found in the remains of Inca settlements of Peru 7,000 years old. Native Americans grew it and introduced it to the Pilgrims. Columbus found it growing in the new world in 1492.

Popcorn is a distinct variety of corn. It has a small ear and kernels that are pointed at the top and bottom. The very hard endosperm (stored food area) explodes when heated.

CORN PLANT



CORN SEED



POPCORN FIREWORKS

You Need --

- * Popcorn
- * Oil
- * Electric frypan
- * Large, clean sheet

What To Do --

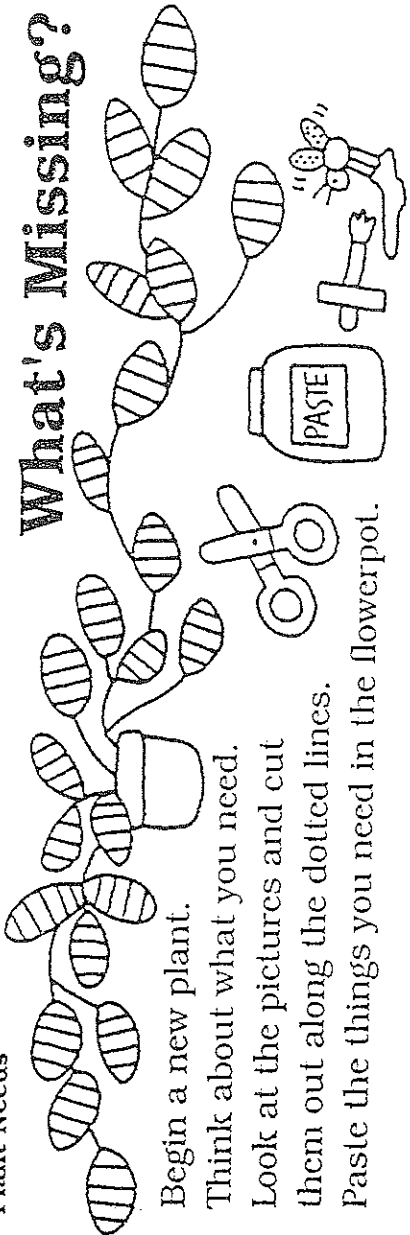
Spread a clean sheet on the floor or outside. Put an electric frypan in the center. Add a bit of oil and pop the corn without covering the pan. Sit on the sheet and enjoy the explosion! Free flight!!

BAKED CARAMEL CORN

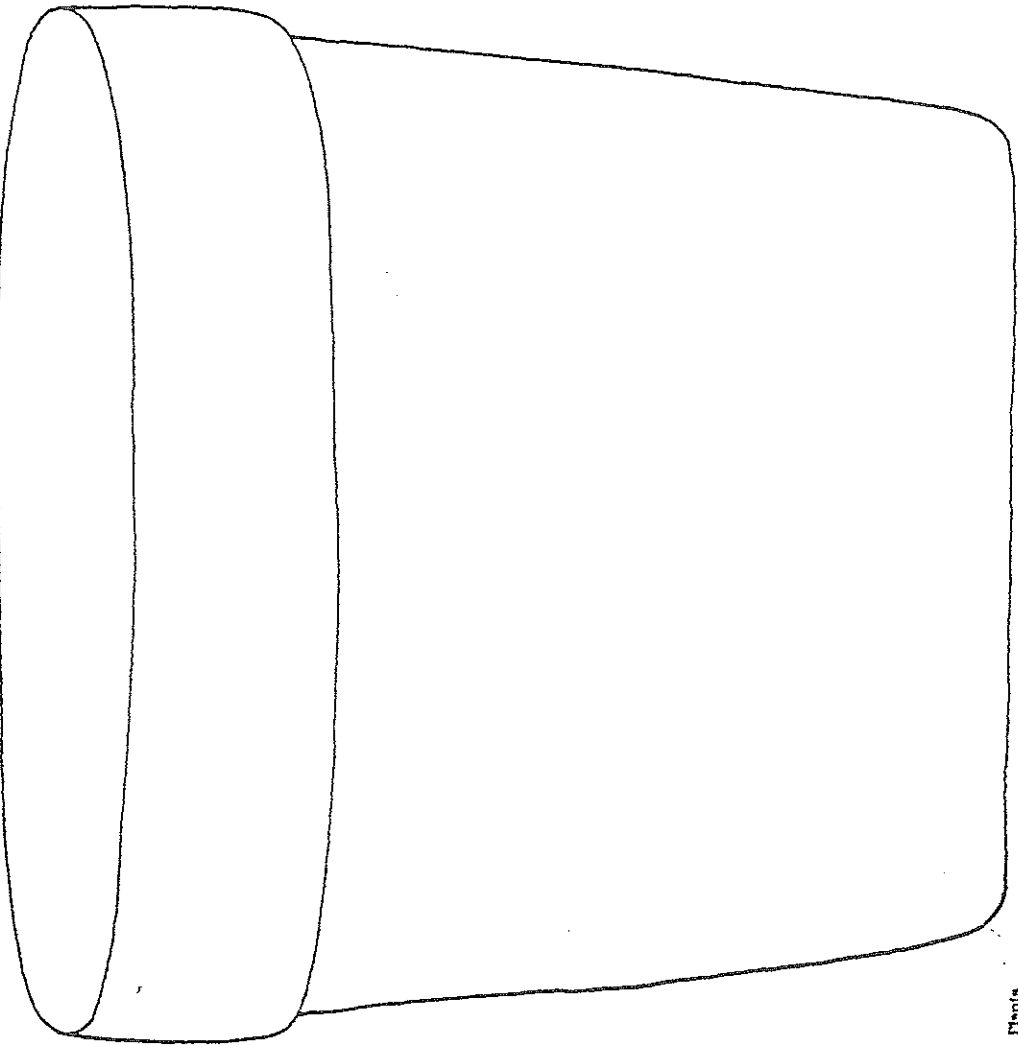
- 2 sticks margarine, melted
- 2 c. packed brown sugar
- 1/2 c. corn syrup
- 1 tsp. salt
- 1/2 tsp. soda
- 1 tsp. vanilla extract
- 6 qt. popped popcorn

Bring margarine, brown sugar, corn syrup and salt to a boil in saucepan, stirring constantly. Cook for 5 minutes. Do not stir. Remove from heat. Stir in soda and vanilla. Pour over popcorn in large baking pan; mix well. Bake at 250 degrees for 1 hour, stirring every 15 minutes. Break apart when cool. Yield: 24
Yield: 24 one-cup servings.

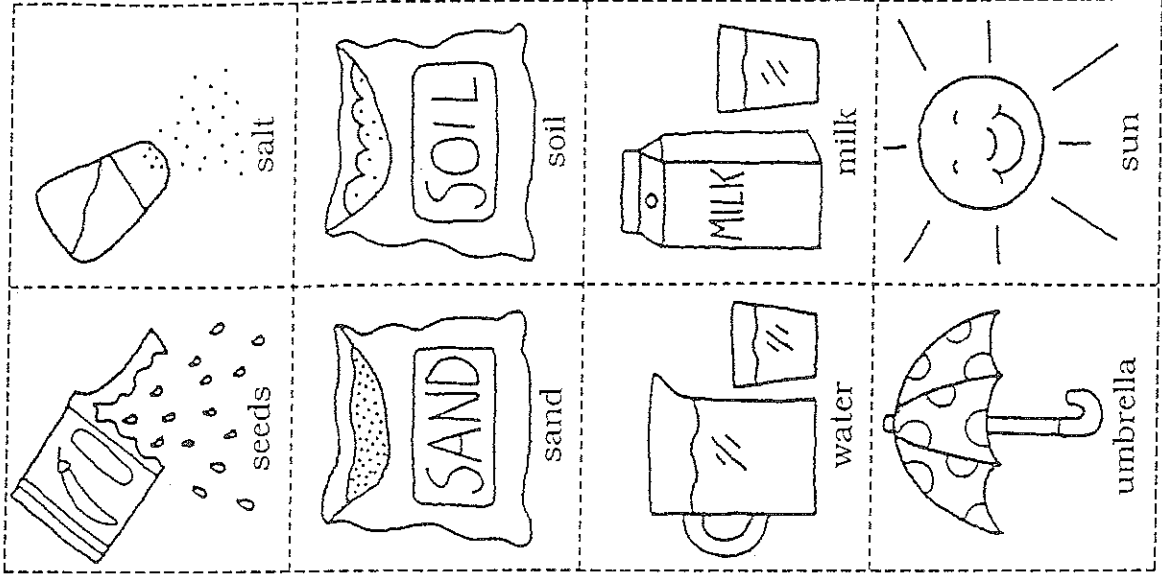
What's Missing?



Begin a new plant.
 Think about what you need.
 Look at the pictures and cut
 them out along the dotted lines.
 Paste the things you need in the flowerpot.



Name _____



The Garden Club of Greater Lansing
The Mae Burgess Junior Gardening Project

HOW IT WENT!

- GRADE: Kindergarten Yes No
1. The corn kit is a good idea? / / / /
2. The concepts are at a K-1 level? / / / /
3. Kit materials (should be stored in building from previous years) supplied me with appropriate educational background for teaching? / / / /
I could have used _____
-
4. Corn Project was enjoyed by the children? / / / /
5. Children gained something from participating in this unit? List typical gains _____ / / / /
-
6. Next time _____ (List whatever you think would help the children and the parents). _____
-
7. Tell us one interesting, funny or unusual episode that occurred while doing this unit. _____
-
-
-

(Use back of sheet if necessary.)

SCHOOL _____ Teachers _____

The Garden Club of Greater Lansing would like to have copies of pictures taken in your classroom; or, pictures taken by the family of the children at home with their fully-grown corn plants. Any help you can give us in this endeavor is appreciated.

Thank you for participating in this junior gardening corn project. Since 1979, the GCGL has been pleased to supply these materials free of charge. We know you are busy, but your response will help us prepare for another year. Please mail to:

Mrs. Barbara Jones or Mrs. Reba Torongo
1419 Fair Oaks 2504 Ridgeline
East Lansing, MI 48823 Lansing, MI 48912

The Garden Club of Greater Lansing
The Mae Burgess Junior Gardening Project

HOW IT WENT!

- GRADE: First Grade
- | | Yes | No |
|------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|
| 1. The corn kit is a good idea? | / / | / / |
| 2. The concepts are at a K-1 level? | / / | / / |
| 3. Kit materials (<u>should be stored in building from previous years</u>) supplied me with appropriate educational background for teaching? | / / | / / |
| I could have used _____ | | |
| 4. Corn Project was enjoyed by the children? | / / | / / |
| 5. Children gained <u>something</u> from participating in this unit? List typical gains _____ | / / | / / |
| 6. Next time _____ (List whatever you think would help the children and the parents). | | |
| 7. Tell us one interesting, funny or unusual episode that occurred while doing this unit. _____ | | |

(Use back of sheet if necessary.)

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Mrs. Barbara Jones	or	Mrs. Reba Torongo
1419 Fair Oaks		2504 Ridgeline
East Lansing, MI 48823		Lansing, MI 48912

STEPS IN PLANTING SEEDS

1 USE A PLASTIC (STYROFOAM) EGG CARTON. CAREFULLY REMOVE TOP AND PLACE UNDER BOTTOM OF EGG CARTON TO USE AS DRIP TRAY.



2 PUNCH HOLE IN BOTTOM OF EACH EGG CELL WITH A PENCIL POINT.

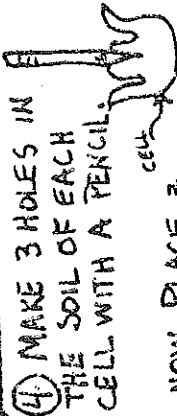


3 PUT POTTING SOIL IN EACH CELL OF EGG CARTON; THEN MOISTEN SOIL AND LET WATER DRAIN ONTO DRIP TRAY.



NOW YOU'RE READY TO PLANT SEEDS!

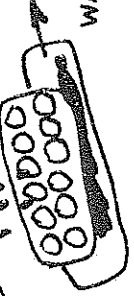
4 MAKE 3 HOLES IN THE SOIL OF EACH CELL WITH A PENCIL. NOW PLACE 3 OF THE SAME TYPE SEEDS IN EACH CELL TO THE RIGHT DEPTH (SEE CHART ON BACK PAGE).



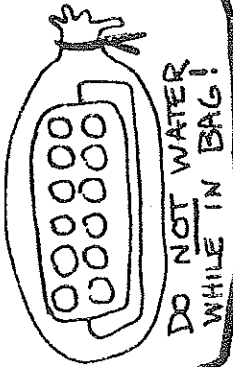
5 THEN GENTLY PAT SOIL TOGETHER TO COVER SEEDS.



7 NOW SPRINKLE CAREFULLY WITH WATER. AFTER WATER HAS STOPPED DRIPPING THROUGH HOLES, DUMP WATER OUT OF DRIP TRAY.



8 PUT EGG CARTON WITH DRIP TRAY INTO A PLASTIC BAG (BAGGIE, BREAD BAG, ETC.) AND TIE WITH A TWIST'EM. KEEP IN BAG UNTIL THE SEEDS BEGIN TO SPROUT.



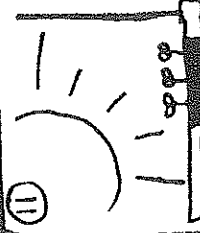
9 PLACE IN A WARM AREA (65-75°F) - NOT IN DIRECT SUNLIGHT - UNTIL SEEDS SPROUT. THEN PLACE IN A COOL-AREA. REMOVE PLASTIC AS SOON AS MOST SEEDS SPROUT.



10 IF MORE THAN ONE PLANT COMES UP IN EACH CELL, PINCH OUT (OR SNIP OFF WITH SCISSORS) ALL BUT THE STRONGEST ONE IN EACH CELL. REMOVE THESE



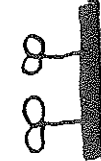
11 TO PREVENT PLANTS FROM BECOMING TALL AND SPINDLY -- PLACE IN A SOUTH WINDOW OR UNDER FLUORESCENT LIGHTS.



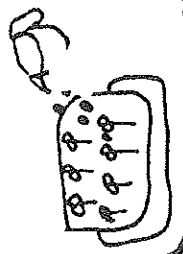
NOT THIS



THIS →



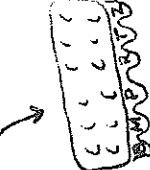
12 WATER PLANTS WHEN SOIL BEGINS TO DRY OUT.



6 M... what? what are they? DON'T FORGET TO LABEL SEEDS!



USE A PEN TO WRITE THE NAME OF THE SEEDS YOU PLANTED ON THE OUTSIDE OF EACH EGG CELL. YOU CAN ABBREVIATE USING THE FIRST LETTER OF THE SEED NAME. AN EXAMPLE WOULD BE:



- B = BEAN
- M = MARIGOLD
- P = PUMPKIN
- R = RADISH
- T = TOMATO
- Z = ZINNIA