Heritage Gardening Vegetables
Michigan State University Cooperative Extension Service
4-H Club Bulletin
Jane L. Taylor, J. Lee Taylor, Horticulture
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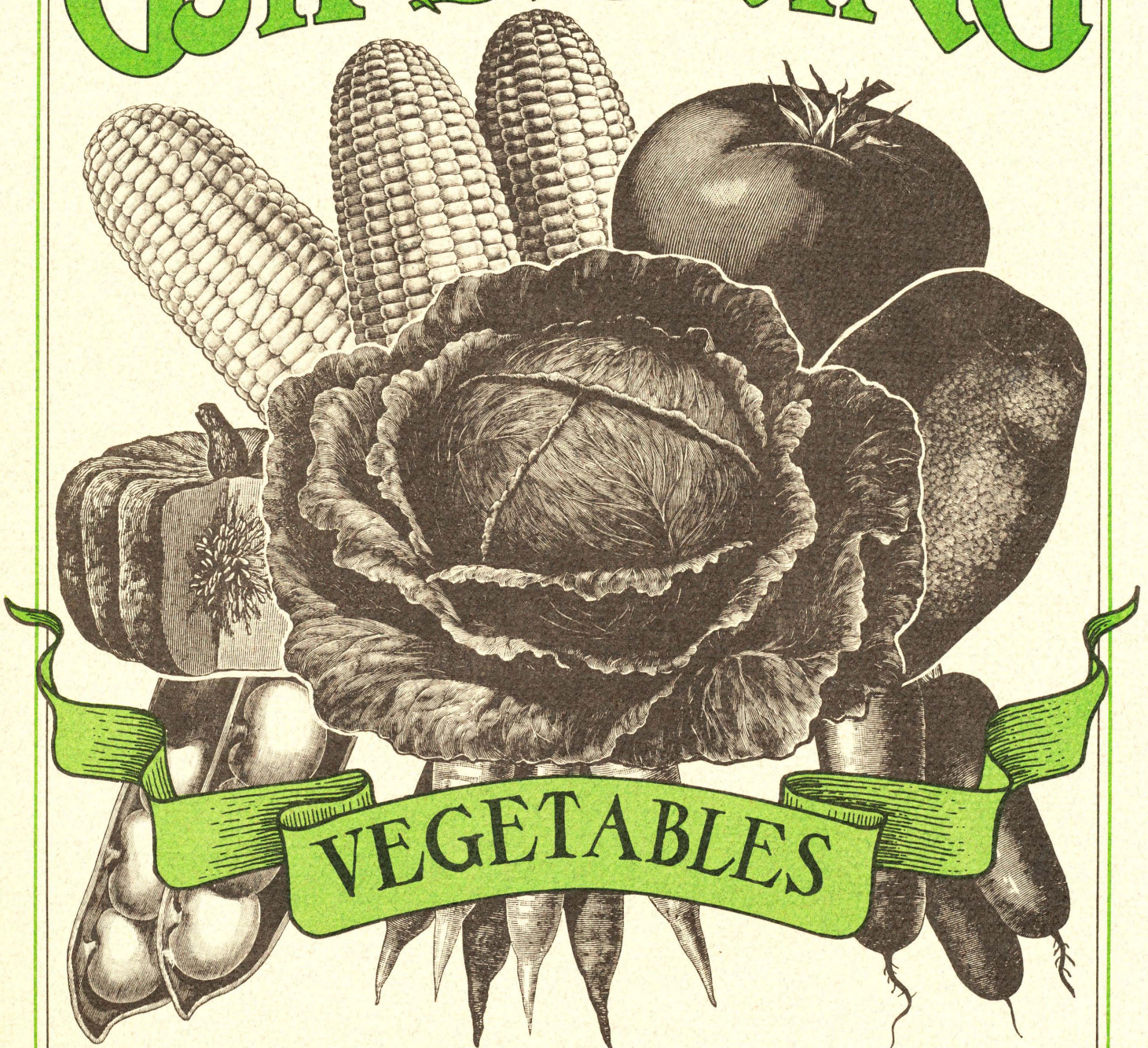
4-H 1279

HERITAGE GARDENING



4-H—Youth Programs • Cooperative Extension Service • Michigan State University

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This bulletin was written by Jane L. Taylor, Outdoor Education Consultant, and J. Lee Taylor, Extension Horticulture Specialist, Department of Horticulture, Michigan State University. Design is by Marian Reiter.

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Earl Threadgould (Chairperson)	4-H—Youth Agent, Ingham County
Theresa Dow Silm	4-H—Youth Agent, Clinton County
Cliff Trudell	Volunteer, Marquette County
Frank Kapp	4-H—Youth Agent, Ogemaw County
Roberta Lawrence	Horticulture Agent, Washtenaw County
Loretta Curtis	4-H Program Assistant, Wayne County
Meg Siegl	Horticulture Instructor, MSU
Denise Cerny	Volunteer, Clinton County
Wallace Ribbron	Volunteer, Wayne County
David Houseman	Program Manager, Food Delivery Systems, Michigan Office of Services to the Aging
Jim Korienek	Teen Volunteer, Clinton County
Todd Heimberger	Teen Volunteer, Clinton County
J. Lee Taylor	Extension Specialist, MSU
Rhonda Walker-Buckingham	4-H Program Leader, MSU

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Preface

This bulletin was written for 4-H members and leaders who are particularly interested in horticulture, FOLKPATTERNS, foods and nutrition, and photography projects.

The goals of a Heritage Gardening—Vegetables project are to:

- Develop an awareness of our plant heritage by the cultivation of heritage vegetable varieties
- Introduce gardening folklore information as it pertains to vegetable gardening
- Promote and stimulate interest in preserving heritage vegetable varieties
- Introduce heritage gardening as a topic for exploration in 4-H projects and activities

4-H Heritage Gardening projects will give youth and leaders the experiences to:

- Identify heritage vegetable varieties cultivated by early settlers
- Describe heritage gardening methods and tools
- Develop skills and attitudes to collect and interpret oral and visual history materials

Through your Heritage Gardening project, you should contact people in your community with gardening experience. They may be family members, relatives, neighbors, or older adults. If you need to get in touch with persons with lifetime gardening experiences or "grassroots gardeners," contact your local county agency on aging. If you need further information or addresses, contact the Michigan Office of Services to Aging, P.O. Box 30026, Lansing, MI 48909.

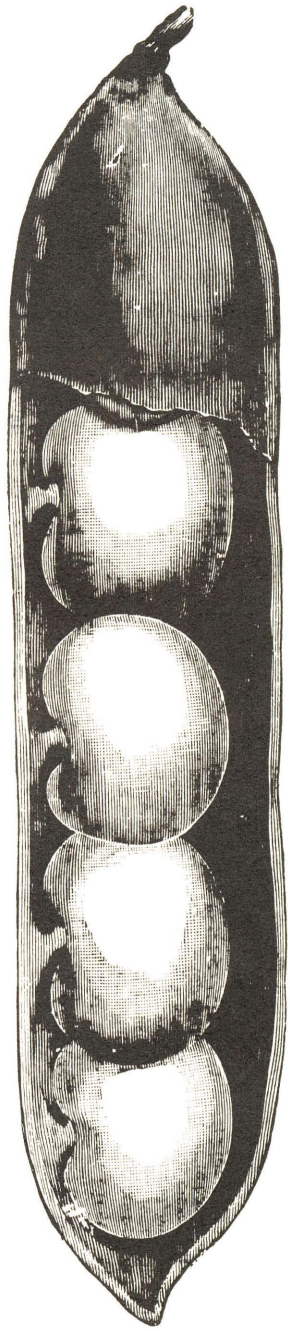
The various activities in this bulletin will refer to 4-H FOLKPATTERNS projects. Techniques for information gathering, taping, interviewing, making short-item cards, photography, etc., are all explained in 4-H 1222, *4-H FOLKPATTERNS Leader's Guide.* Interviewing local community gardeners will provide a source of information that may be specific to your geographic area. Information can be gathered that will assist in comparing personal or community traditions while developing an awareness with community members in 4-H projects. You will be learning unwritten history. We hope you can identify where this knowledge can be found, how to record it, and how to pass it on to others. For more information, contact the Folk Arts Division, Michigan State University, East Lansing, MI 48824.

This bulletin does not contain cultural information on each vegetable variety. Please refer to other Extension bulletins (for example, E-529, *Home Vegetable Garden,* and E-824, *Family Vegetable Garden Series*) for information on planting dates, spacing, days to maturity, etc. Contact your county Cooperative Extension Service office for more information.

The information in this bulletin is arranged following the seasonal calendar year, from catalog ordering in the winter to the fall harvest. At the end of the bulletin is a section on heritage gardening activities. You may wish to refer to these throughout the year for additional ideas to enrich your project.

Many of the folklore and history projects described in this bulletin would work very well for the Young America Garden or Experimental Horticulture contests. These contests are sponsored by the National Junior Horticulture Association (NJHA) and are open to youth 8 years of age (or younger if able to print) through 21 years of age. Write to the following address for more information: NJHA, 5885 104th Street, Fremont, MI 49412.

Happy heritage gardening!



We gratefully acknowledge the following for permission to use their materials in this bulletin:

- *The picture of Johnny Appleseed on page 4 is from* Johnny Appleseed: Man & Myth, *by Robert Price, Indiana University Press, copyright 1954.*
- *The picture of Liberty Hyde Bailey on page 5 is from the Michigan State University Archives & Historical Collections.*
- *The Heirloom Vegetable Garden plan on page 20 is adapted from* Vegetable Crops *by Robert Becker and Roger A. Kline, College of Agriculture and Life Sciences, Cornell University, Ithaca, New York.*
- *The Indian garden plan on page 29 was developed by the Dickson Mounds Museum in Lewiston, Illinois.*

How Our Seeds Got Here

There were no farms or permanent gardens when the first settlers arrived. Forests covered most of the Atlantic coast. Most of our cultivated flowers, vegetables, and fruits came here from other nations. A walk through your garden is really a walk around the world.

Christopher Columbus first introduced new food plants from other parts of the world to America. Queen Isabella, who financed his trip, also directed that he bring back to Spain any new plants he might discover. He brought back corn, potatoes, squash, tobacco, pumpkins, beans, grains, and fruits. These plants were guarded as though they were gold. We celebrate Columbus Day (October 12) each year; for those who love plants, it is a very special day.

At the beginning of the 17th century, French explorer Samuel De Champlain was starting a colony in Canada on the St. Lawrence River. At almost the same time, the English were founding the Jamestown Colony in Virginia. The Pilgrims arrived in Massachusetts in 1620, and from then on immigrants by the hundreds and thousands came to America. They brought their dreams and their seeds. In later centuries they arrived at Ellis Island in New York City with seeds in their pockets and sewn into their clothing and the linings of suitcases.

These brand new Americans brought their seeds of life to start anew in a strange land. They planted these seeds, harvested their crops, and saved some seeds for the next growing season. But future generations generally lost touch with saving seeds. Seeds could be cheaply purchased in packages—and many old varieties died out.

What Is an Heirloom Vegetable?

The term "heritage" describes traditions that are handed down by one's ancestors. An "heirloom" is a possession passed down from one generation to another.

An heirloom vegetable is usually a variety that was introduced and grown before 1900. Many of these varieties are no longer sold by seed companies. Some are kept alive by families who pass them on from one generation to another.

There are tens of thousands of edible plant species in the world, but only about 150 species have been cultivated. The world depends on only about 20 crop species for 90 percent of its food. Each year fewer and fewer varieties are grown. People will store unused spinning wheels and horse-drawn plows in barns and attics, but seeds have to be grown and saved to survive.

Scientists have been very concerned about this. There is more and more interest in saving heirloom seeds. Each variety carries certain genes or characteristics that make it different from other varieties. It's these differences that need to be saved. If there was a change in climate or a disease epidemic, these different varieties with their special genes could be used to develop new, more resistant varieties.

In the 1830's and 1840's, the Irish grew only one variety of potato. This variety was not resistant to a fungus and the entire crop was destroyed. During the potato blight, 2 million people starved and another 2 million people were forced to leave Ireland.

As our plant varieties shrink or become extinct, the pool of plant genes shrinks. Early farmers planted many varieties. Thomas Jefferson grew 250 varieties of vegetables and said, "The greatest service which can be rendered any country is to add a useful plant to its culture."

Folklore & Modern Science

Ever since people began to till the soil, they have looked for favorable signs in the stars, moon, and plants to guide them in planting and harvesting crops. Through the centuries, every culture has built a legacy of gardening and farming "rules." Some of these are recorded in books but most are passed on verbally from parent to child.

"Plant corn when apple leaves are as big as a mouse's ears."

"Plant root vegetables in the dark of the moon; plant others in the light of the moon."

Some of these sayings are based on people not knowing the facts. Other are based on true observations.

The early peoples believed in anything they thought might make crops produce more. Peppers were supposed to grow better if a red-haired man planted them. Corn planted by a pregnant woman was supposed to grow better.

The moon was very often involved in planting folklore:

"Plant round seeds in the full of the moon, flat or long seeds in the old moon."

"Anything that grows into a head (cabbage, cauliflower, lettuce) should be planted in a full moon so that it will grow big and round."

Johnny Appleseed

One scientist studied the rhythms of potatoes for several years. Even when these plants were grown at constant conditions (same light and temperature), he found that they had "knowledge" and responded to outside influences such as the time of day, the position of the sun, the position of the moon, and even the time of the year. By measuring the rate of oxygen used, he found that the potato showed a lunar monthly rhythm.

There are many sayings that link the planting of a crop with a stage of growth of a local tree or shrub:

"When pin cherry leaves are as big as a squirrel's ears, put in your garden and have no fears."

"Plant _____

—when the shadbush (June berry) is in bloom.

—when apple blossoms drop.

—when hickory leaves are as big as a crow's feet.

—when cherry trees are in bloom."

Scientists agree these recommendations are usually correct. Each of them reflects the coming of spring, the gradual warming of the soil, and the longer days. The sayings helped to protect less experienced gardeners from planting crops too early, when seeds or plants would likely be frosted or decay in cold soils.

Folklore has played an important role in people's efforts to feed themselves. Some lore was based on fears of evil spirits and the unknown. Much of this was discarded as people learned more. But other bits of lore originated from wise observations of smart men and women. These beliefs lasted until modern times when they were confirmed and refined by science.

Johnny Appleseed

Part of our gardening folklore is the legendary early pioneer seedsman, Johnny Appleseed, who used to carry seeds in a sack as he traveled. His real name was John Chapman, but he was better known as Johnny Appleseed. He was born in Massachusetts in 1774, and he spent his life walking along the dirt roads of Pennsylvania, Ohio, Northern Indiana, and Southern Michigan giving apple seeds to the early settlers. These settlers had come from the east by wagon to settle in the Midwest. They had brought only their most important possessions and furniture, and had built log cabins for their families when they arrived. There wasn't room to carry fruit trees with them in their wagons.

Johnny Appleseed would give apple seeds to the settlers and show them how to plant the seeds and care for the seedlings. On later visits he would check to see how the seedlings were growing. He showed the

settlers how to transplant, prune, and care for the young trees.

Johnny was always welcome on his visits because the settlers lived far apart and had few visitors. Most travelers in those days were lawyers, ministers, and doctors. Newspapers were scarce and many of the people couldn't read anyway—so Johnny spread the news as he traveled.

Johnny Appleseed died in Indiana in 1845 when he was 70 years old.

Liberty Hyde Bailey

Liberty Hyde Bailey was born in South Haven, Michigan, on March 15, 1858. As a young boy, he was fond of all living things. His home was full of his plant and animal collections. At an early age he learned to care for the family garden and graft fruit trees on his father's farm. At age 14 he read an essay entitled, "Birds," at the Michigan State Pomological Society meeting (a society of people interested in the study of fruit and fruit growing). He was the youngest person to read an essay in the organization's history.

In 1877, Bailey went to Michigan Agricultural College (now known as Michigan State University) in East Lansing to study botany and horticulture with Professor William Beal. He excelled in studies of plants. During one winter term, he taught in a nearby one-room schoolhouse called the Carl School. During recess and on Saturdays he taught nature study to students. After graduating from college, Bailey went on to study botany at Harvard University.

Bailey had a life plan: 25 years for learning, 25 years for service or the practice of a job, and 25 years doing what interested him most.

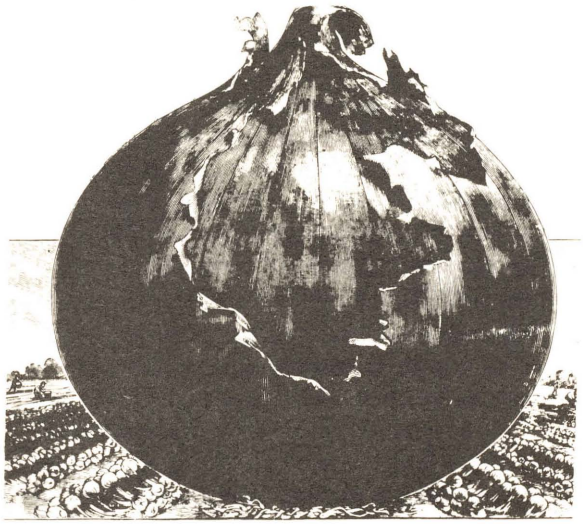
In 1885, Professor Beal asked Bailey to return to Michigan Agricultural College (MAC) to become chairperson of what was to become the first Horticulture Department in the United States. While on the faculty, he designed the first Horticulture Laboratory called Eustace Hall. Bailey left MAC to go to Cornell University in New York where he served as Horticulture Department Chairman, and later as Dean of the College of Agriculture.

During his long life (he lived to be 96), Bailey wrote over 700 papers and 95 books, including encyclopedias. He became a world-renowned scientist and the most prolific horticulture writer in history. Even though he was a famous scientist, world traveler, editor, administrator, philosopher, and author, he was always interested in writing nature study leaflets for young people. His main objective was "to open the child's mind by direct observation to a knowledge and love of the common things and experiences in his environment."

"I dropped a seed into the earth. It grew, and the plant was mine."

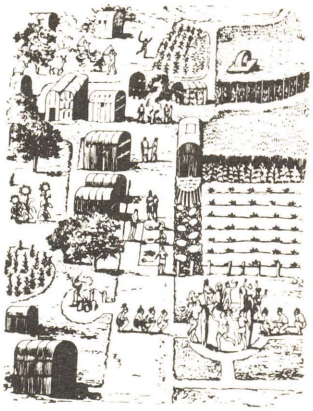
From: *A Plant at School,* 1903
L. H. Bailey

Liberty Hyde Bailey



I went to the garden and
got it,
Came to the house and cried
with it.
An onion.

Gardens—Old vs. New



An Indian village

The Early Garden

The early garden was usually located near the house, and everyone in the family helped with it. Unlike today, when we can buy frozen or canned vegetables, most vegetables grown in the 1800's were meant for storage. They were either pickled, dried, or preserved in root cellars.

If you lived in the old days, you might not recognize the vegetables. For example, there was a radish that was black and the size of a turnip. Some lettuce had loose heads and frilly leaves, some carrots were yellow, and beans had strings. You would not have eaten tomatoes in the early 1800's, since they were grown only for ornament.

Today many gardeners grow heirloom varieties because they feel they are better than modern varieties. Modern breeders work hard to produce vegetables that will ripen at the same time so they all can be harvested at one picking in the same day. They also strive to produce vegetables that will have tough skins that won't bruise in shipping or that will be all the same size for a processor.

Some heirloom varieties are not disease resistant, don't produce high yields, and may not have a great flavor. Then why grow them? Because it will take us on a journey through time to give us a better idea of how our ancestors lived 100 years ago. It gives us a sense of roots.

"No occupation is so delightful to me as the culture of the earth, and no culture comparable to that of a garden."

—Thomas Jefferson

The Modern Garden

Modern gardening can be an exciting activity to participate in as well as an interesting topic to study. Many people grow vegetable gardens today for a variety of reasons: to make extra income, to fill leisure time, to grow favorite foods not available in local markets, to enjoy fresh or organically grown vegetables, or simply to provide food for the household. Gardening is done in all kinds of locations—from garden plots near summer kitchens of farmhouses (a kitchen located in a wing attached to the house) to rooftop greenhouses to community-shared plots. People garden wherever they have the space and sunlight to grow things.

Even though 150 plant species are now cultivated, a gardener usually only grows a few species. What a gardener chooses to grow will depend on what seeds are available and the kind of climate and soil conditions.

Family traditions, regional traditions, and personal likes or dislikes of vegetables will also affect what is grown in a garden. New immigrants to this country, such as the Indochinese from Southeast Asia or Eastern Europeans, continue to bring seeds and foods they prefer with them, thus introducing new vegetables to communities.

New gardening techniques and tools also continue to change the way people garden. New methods are constantly added to the old.

Seeds—A Wondrous Package

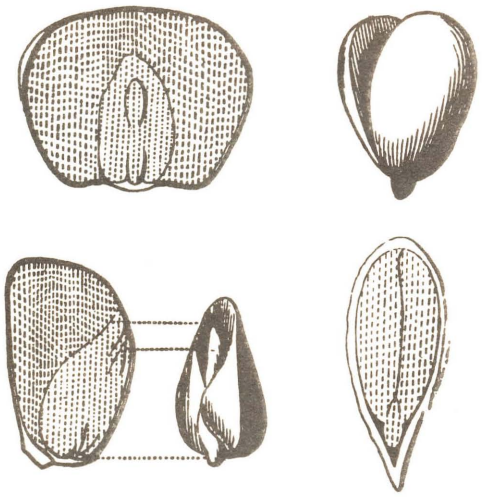
A plant seed is really a very young plant which has not yet begun to grow actively but is very much alive. Seeds come in many different sizes, shapes, and colors. Some are so small, like orchid seeds, that you need a magnifier to see them. Some are very large like the coconut.

A seed held in the hand feels dry and hard. Since it is not growing we say it is dormant or inactive. When the embryo inside a seed starts to grow actively, we say that the seed germinates or sprouts.

A seed will germinate when the conditions outside it are just right:

—When there is enough moisture
—When there is enough oxygen in the soil
—When the temperature is warm enough

The stored food inside a seed is an important source of food for people. Instead of being used by the plant embryo for germination, this food is eaten by people and animals. For example, we eat peas and beans for dinner. We feed wheat, oats, and corn to animals, and we also eat them ourselves in bread and breakfast cereals.



How Seeds Are Formed

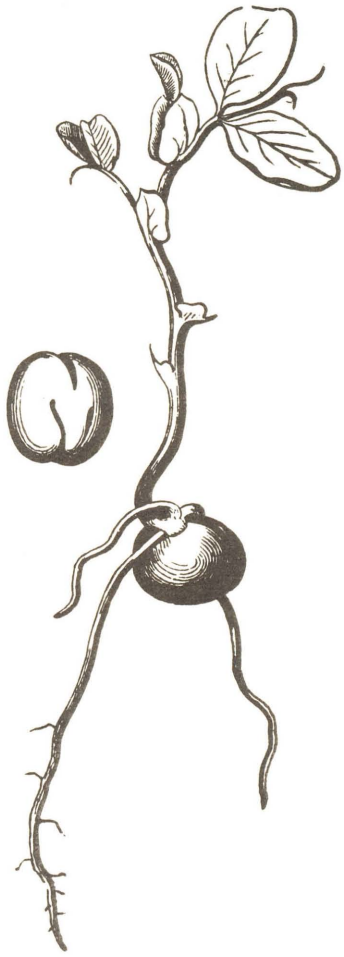
Seeds are formed in fruits which develop from ovaries in a flower. Flowers are reproductive organs each usually containing colorful petals, protective sepals, stamens, and a pistil.

The stamens are the male part of the flower; they produce pollen grains which contain male sex cells. This pistil is the female part and contains the ovules inside the protective ovary. The ovules contain the female sex cells.

When the pollen grain lands on the top of the sticky pistil, it starts to grow a hairlike tube. The tube grows down through the pistil into the ovary and into an ovule. Then the pollen tube discharges male sex cells into the ovule and one male sex cell unites with the female sex cell. This is called fertilization. The ovule begins to grow and develops into a seed within the ovary (fruit). Seeds remain inside the fruit and are protected by it until the fruit matures. Then the seeds may separate from the fruit (for example, bean and pea seeds).

The purpose of the plant has now been completed. It has provided seeds for a new generation of plants just like the plant that made it.

In most plants, stamens and pistils are in the same flower. When pollen from a stamen can fertilize the ovules of a pistil in the same flower, it is called self-pollination (for example, tomatoes, beans, and peas). Cross-pollination is necessary when plants are self-sterile (pollen can't fertilize ovules in the same flower). In this case, pollen must come from a different flower either on the same plant or a different plant of the same species (for example, cabbage).



Pea germination

You'll have good luck all year if you eat peas on New Year's Day.

Know Your Plants

Parts of Plants You Eat

Plants have four major parts—roots, stems, leaves, and flowers. If pollinated, flowers may produce fruits which contain one or more seeds.

We use different parts of different plants as food. We eat the fruit of the cucumber plant, the bud of a cabbage, the root of a carrot. Here is a list of some plant parts that we eat. You may discover more on your own as you eat dinner during the next week.

Roots—beet, turnip, sweet potato
Stems—white potato, kohlrabi
Leaves—lettuce, spinach, chard
Leaf stalk—celery, rhubarb
Furits—tomato, snap bean, snap pea, sweet corn kernel (one-seeded fruit)
Seeds—lima bean, pea, peanut
Young flower buds and stems—broccoli, cauliflower
Buds—cabbage, brussels sprout

How Plants Get Their Names

Many catalogs and seed packets use the scientific name of plants. People have always wanted to try to arrange things in an orderly manner. Even Noah grouped his animals into orderly pairs for their voyage on the Ark.

If we didn't use scientific names with all the many plant species in the world, the result would be disastrous. The system scientists use is accepted all over the world. This helps to keep things straight and less confusing. Plants are grouped according to how they are related.

Each plant has a Latin name made up of two parts: the genus or generic name and the species or specific name. The cultivar is the cultivated variety.

The family tree below shows the "Plant Kingdom."

Division	Spermatophyta *(Seed-bearing plants)*
Class	Angiospermae *(Flowering plants)*
Subclass	Dicotyledonae *(2 embryonic leaves)*
Order	Rosales
Family	Leguminosae *(Pea family)*
Genus	Phaseolus *(Bean)*
Species	vulgaris *(common)*
Cultivar	Kentucky Wonder

The scientific name for the plant above is *Phaseolus vulgaris* 'Kentucky Wonder.' The common names are: pole bean, green bean, snap bean, common bean, runner bean, string bean, and wax bean. The cultivar is known as Kentucky Wonder pole green bean. If you have a bean seed that is an heirloom and has been in your family for generations, it may be known by its cultivar name 'Jack's best bean.'


JANUARY
"Lettuce" get organized and order seed catalogs.
FEBRUARY
Order seeds. Plan ahead.
MARCH
Get tools ready. Start some plants indoors.
DECEMBER
Give seed gifts for Christmas. Read your garden diary. Begin 4-H Tel-Awards reports.
A HERITAGE GARDENING YEAR
APRIL
Learn about moon planting. Plant early crops. Start your diary.
NOVEMBER
Harvest late seeds. Make Christmas gifts.
MAY
Learn about companion planting. Plant later crops.
OCTOBER
Harvest and save seeds. Prepare garden for winter. Participate in harvest festival!
JUNE
Make a scarecrow. Plant Indian garden.
SEPTEMBER
Write horticulture contest reports. Continue harvest.
AUGUST
Prepare exhibits. Go on a garden tour. Continue harvesting.
JULY
Harvest early crops. Start exhibits for fairs, shows, etc.

Ordering Catalogs & Seeds

Getting Started

Order your bulletins from your county Cooperative Extension Service office. Each member should have one copy each of 4-H 197, *The Home Garden Beginner,* and E-529, *Home Vegetable Garden.* The leader should have a copy of 4-H 1222, *4-H FOLKPATTERNS Leader's Guide.*

The following bulletin is very helpful for the historical information on the heirloom vegetables that will be grown: *The Heirloom Vegetable Garden*, Cornell Cooperative Extension Information Bulletin 177, 4-H Leader's Guide L-10-13. You can order this bulletin from Distribution Center C, 7 Research Park, Cornell University, Ithaca, NY 14850. The cost is $3 per copy; one per leader would be very helpful.

Seed Catalogs

In the early days of our country, some of the settlers used seeds they had saved from year to year. But most seeds were imported from Europe, especially England.

The first commercial seedsman in the U.S. was David Landreth. He began business in Philadelphia in 1784. Among his customers were George Washington and Thomas Jefferson. Landreth Seed Company is still in business today. In 1789, the Shakers, a religious group of New York, started the first commercial seed nursery in the United States. The Shakers packaged their seeds in small paper packets called "papers." We can thank the Shakers for the brightly colored seed packets we see in stores today.

The first mail-order seed catalog was introduced in 1834. These early catalogs were filled with detailed line etchings. Some of these were used to illustrate this bulletin.

Millions of seed catalogs are printed each year by larger seed companies. These catalogs are the most widely read garden books in the world. They are also some of America's best bargains. Most are usually free. They contain beautiful pictures and descriptions of varieties and how-to-do-it information.

You will need to order **many** seed catalogs to obtain the heirloom varieties you wish. Unless otherwise noted, these catalogs are FREE.

W. Atlee Burpee Co.
Warminster, PA 18991

Comstock, Ferre & Co.
263 Main St., P.O. Box 125
Wethersfield, CT 06109

Farmer Seed & Nursery Co.
Faribault, MN 55021

Gurney Seed & Nursery Co.
Gurney Building
Yankton, SD 57070

Joseph Harris Co.
Moreton Farm
Rochester, NY 14624

Charles C. Hart Seed Co.
304 Main Street
Wethersfield, CT 06109

Herbst Brothers Seedsmen, Inc.
1000 N. Main Street
Brewster, NY 10509

Johnny's Selected Seeds
Albion, ME 04910

D. Landreth Seed Co.
P.O. Box 6426
180-188 W. Ostend St.
Baltimore, MD 21230
($2 per catalog. Since 1784, America's oldest seed house.)

Nichols Garden Nursery
1190 North Pacific Highway
Albany, OR 97321

L. L. Olds Seed Co.
P.O. Box 7790
Madison, WI 53791

George W. Park Seed Co., Inc.
Greenwood, SC 29647

R. H. Shumway, Seedsman
628 Cedar Street
Rockford, IL 61101

Stokes Seeds, Inc.
P.O. Box 548
Buffalo, NY 14240

Vermont Bean Seed Co.
Garden Lane
Bomoseen, VT 05732

183 .
CATALOGUE OF
GARDEN SEEDS,
RAISED AND SOLD
BY THE
UNITED SOCIETY,
Pittsfield, Berkshire Co. Mass.

Papers.		Cents
EARLY PETERSBURGH PEAS,	...	6
Large White Marrowfat	do. ...	6
Green Dwarf Marrowfat	do. ...	6
Strawberry	do. ...	6
Berkshire Dwarf Beans,	.....	6
Early Bush	do.	6
Red Cranberry	do.	6
Mangel Wurzel Beet,	.....	6
Blood	do.	6
Turnip Blood	do.	6
Orange	do.	6
Turnip	do.	6
Red	do.	6
White	do.	6
Sugar	do.	6
Scarcity	do.	6
Yellow Onion,	.....	6
White	do.	6
Red	do.	6
Long White Parsnip,	.....	6
Guernsey	do.	6
Salsify	do.	6
Orange Carrot,	.....	6
English Tankard Turnip,	.....	6
English	do.	6
Yellow Swedish	do.	6
White Swedish	do.	6
French	do.	6
Scarlet Turnip Radish,	.....	6
Scarlet	do.	6
Salmon	do.	6
Yellow	do.	6
Black Spanish	do.	6
Squash Pepper,	.....	6
Cayenne	do.	6
Asparagus,	.....	6
Papers, at 6 cts.	.....	

Shaker seed catalog

Activities

1. Order your catalogs. Save them from this heritage project. Years from now it will be fun to look through them and compare varieties. You will need to order **many** catalogs to obtain the heirloom varieties you wish to grow since no one catalog has them all.

2. Interview friends and relatives to see if they have old catalogs to share with you. Some of these dating back to the 1800's are very interesting. W. Atlee Burpee Company has a reproduction catalog from 1888. Check your library for a copy.

3. Interview persons who save their own seeds from year to year. Find out which country the seeds or person originated from. How long have they been growing them? Why do they keep growing them? Do they grow them for a sentimental reason or for use in making a favorite food dish? Are there stories associated with these seeds? Write this information down. Refer to 4-H 1222, *4-H FOLKPATTERNS Leader's Guide,* for information on interviewing techniques and making short-item cards. See if your friends will share some of their heirloom seeds with you. Grow them!

4. You may want to conduct an experiment by planting an heirloom variety and an All-America selection. Be sure to keep records of their growth, resistance to disease, ripening time, how much they produce, and how they taste. Keep this information for a report.

Ordering Seeds

Examine the list of heirloom vegetables (pages 12-17) and list those you would like to plant.* Order those seeds. You may save money if several people place orders together.

Be sure to **save** the packets the seeds come in. They will provide much of the information you need for planting and growing. You also might later use the seed packets in a display or a report.

Another resource that would be helpful to your project is the Heirloom Vegetable Kit. This kit includes a booklet about 19th century gardening and 36 varieties of heirloom seeds (for a 300-square-foot garden) for $12. A small kit (seeds for a 150-square-foot garden) is $8. Order from Roger A. Kline, Department of Vegetable Crops, Plant Science Building, Cornell University, Ithaca, NY 14853. A suggested garden layout for use with the large kit appears on page 20. This plan can be modified depending on your available space.

If you are interested in locating an heirloom plant variety that you may have heard of but is not listed in this bulletin, you can order a directory of old time varieties by sending $1 to Graham Center Seed Directory, Route 3, Box 95, Wadesboro, NC 28170.

*If you are planning on planting a North American Indian garden, check that activity section (pages 27-30) for additional varieties that you may wish to order.

HEIRLOOM CROPS

The varieties that follow are actual varieties that were grown regularly in 19th century gardens and that are still in use today.

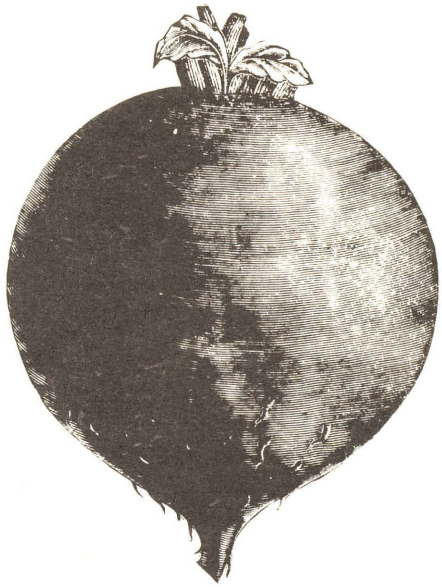
The list of vegetable varieties is taken from *The Heirloom Vegetable Garden*, Cornell Cooperative Extension Bulletin 177, 4-H Leader's Guide L-10-13, by Roger A. Kline, Robert F. Becker, and Lynn Belluscio.

BEANS

Dwarf Horticultural or Speckled Cranberry
Jacobs Cattle
Scarlet Runner

Beans were grown by the Indians in North and South America long before the European settlers arrived. The early explorers found the Indians using beans as a staple in their diets along with corn. Christopher Columbus discovered a field of bean plants upon his arrival. Children in the Massachusetts Colony ate so many beans they adapted an old English verse which referred to "Pease Porridge":

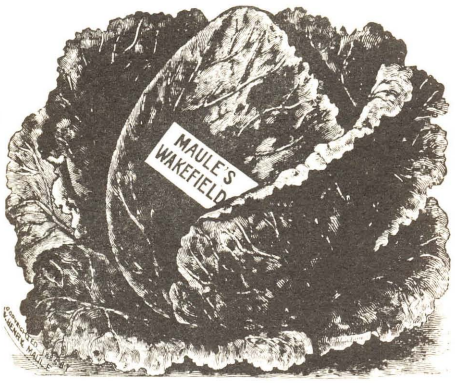
"Bean porridge hot, bean porridge cold,
Bean porridge in the pot, nine days old."



BEETS

Early Blood Turnip
Egyptian
Long Season or Winter Keeper

Beets are related to Swiss chard and sugar beets. They originated in Europe, North Africa, and the Near East. The Germans first used the red beets in the 1500's. Early settlers brought them to America.



CABBAGE

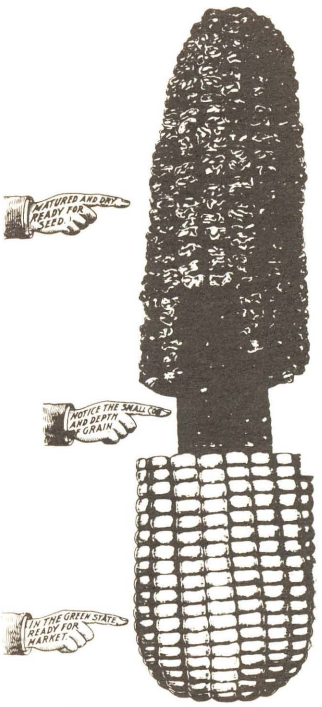
Drumhead Savoy
Early Jersey Wakefield
Late Flat Dutch

The loose-headed cabbage originated in the Mediterranean. The hard-headed forms were developed in the cooler parts of Europe, Germany, and Denmark. Jacques Cartier, an early French explorer, introduced cabbages to America. In 1541 he planted some in Canada. The Indians adapted it for their own use as did the early colonists.

CARROTS

Early Horn or Early Scarlet Horn
Long Orange or Improved Long Orange

Carrots of many shapes, sizes, and colors were grown in Europe in the 1500's. They originated in parts of Asia. The settlers in Jamestown, Virginia, in 1609 were reported to have grown carrots. The Pilgrims in Massachusetts also grew this vegetable.



CORN

Black Mexican or Black Sweet
Stowell's Evergreen

Corn or maize, as the Indians called it, originated in the Andes of Peru. Corn supported the early civilizations of the Americas. Fossils show that corn was grown in North America more than 4,000 years ago. Following the discovery of America, corn spread rapidly throughout the world.

Sweet corn is of more recent origin; it did not become important until the early 1800's. Until that time most people ate young field corn. Historically corn is one of our most important food plants.

CRESS

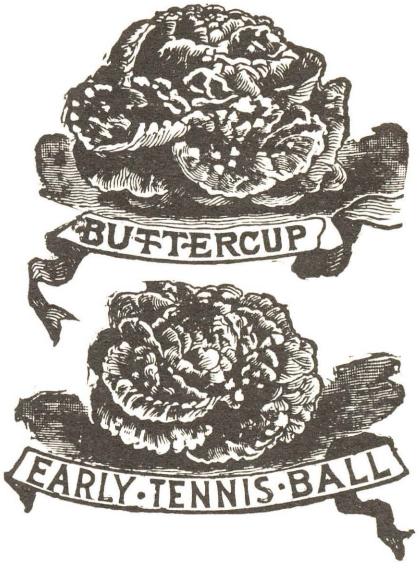
Curled or Peppergrass

A native of western Asia, cress has been cultivated in England since the 16th century. It was brought to this country by the early settlers. It is used today by English school children who grow it on their windowsills. During recess it is put on buttered crackers. Americans use it for a garnish or for sprouts.

CUCUMBER

Long Green or Improved Long Green

India shared cucumbers with the world, and Columbus brought cucumbers to the New World. They were grown by the first settlers at Jamestown, Virginia, and Plymouth, Massachusetts.



LETTUCE

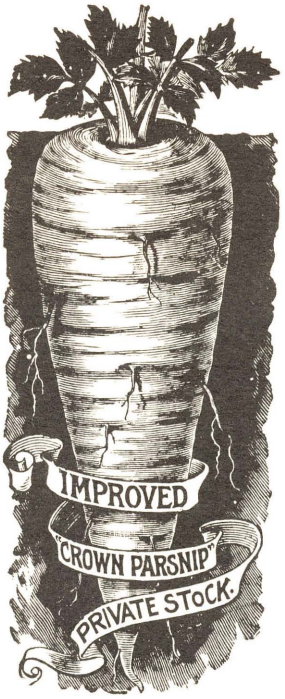
Green Boston (Green Tennis Ball)
Paris White Cos

Our most popular salad plant originated in the Near East. It was popular with the Persian kings and Romans. Seeds were brought to the New World by Columbus. Lettuce was no doubt among the first garden seeds sown in every European colony in this country.

ONION

Red Wethersfield
Southport Yellow Globe
White Portugal or White Silverskin

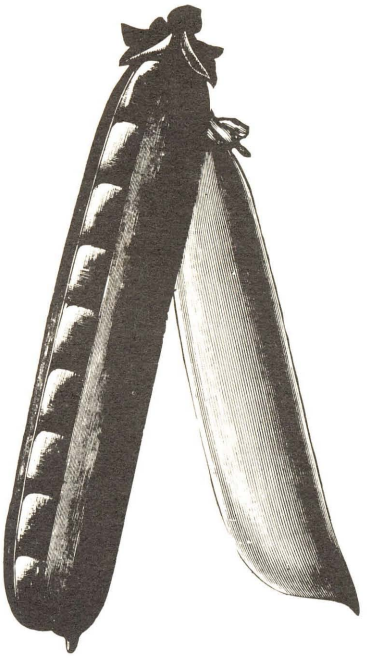
Our common onion originated in middle Asia. Onions were cultivated as food from the earliest period of recorded history. They were eaten by the laborers constructing the giant pyramids of Egypt and by Roman soliders. The Spanish introduced the onion to the West Indies; from there it soon spread to all parts of the Americas.



PARSNIPS

Hollow Crown

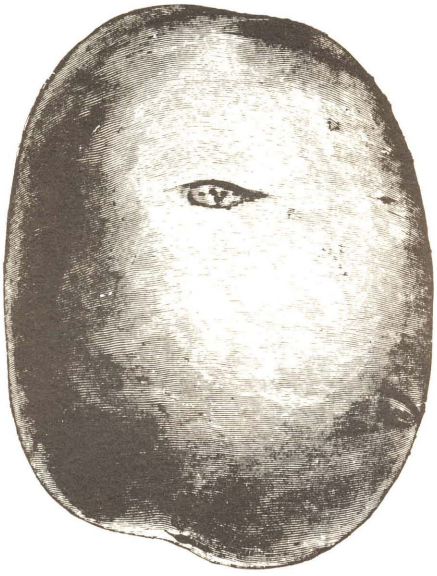
Parsnips and carrots are closely related. Parsnips originally came from the eastern Mediterranean regions. Their use spread to Europe where they became a common vegetable. The English colonists at Jamestown, Virginia, and the Massachusetts colonists grew parsnips.



PEAS

Alaska
Alderman
Dwarf Sugar

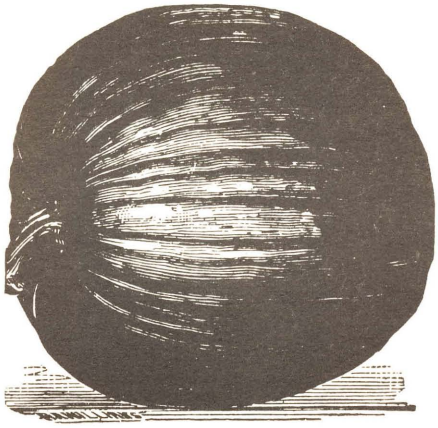
Originally from middle Asia and the Near East, peas were first grown for their dry seeds. After the 16th century, the use of green peas was recorded in France. The edible pod was also known then. The English developed many fine varieties. Peas were introduced into America by the first colonists, but they were commonly used as "split peas" until the 1700's. Columbus planted peas in the West Indies. From there, the seeds spread far and wide.



POTATOES

Green Mountain
Irish Cobbler
Lady Finger
Russet Burbank

The potato is the most important vegetable in the world today. Potatoes are thought to have originated in the Andes of South America. They became important in Ireland in the 1500's. They were first brought to New England by an Irish immigrant in 1719. By the mid-19th century, potatoes were an important staple crop of Northern Europe, the British Isles, and North America. Potatoes formed such a large part of Ireland's food that a serious potato blight in 1846-47 caused a famine.



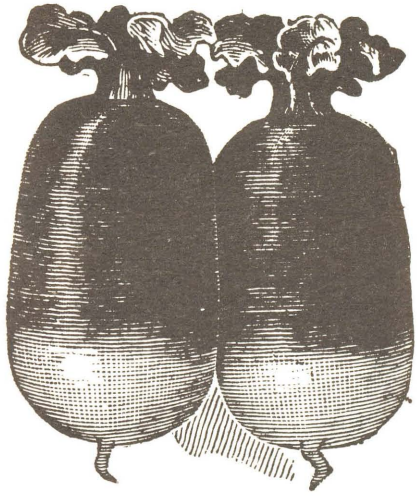
PUMPKINS

Connecticut Field (a direct descendant of the pumpkins the Indians gave to the Pilgrims)

Squash and pumpkins are closely related. They are natives to the Americas. The Indians were growing pumpkins for hundreds of years before the first Europeans came to America. Jack-o-lanterns were made in the British Isles and France before Christ. They were made from turnips, beets, and potatoes. When the settlers came to America, they discovered the orange pumpkins were perfect for that purpose.

The colonists ate pumpkins with great regularity. One Pilgrim wrote:

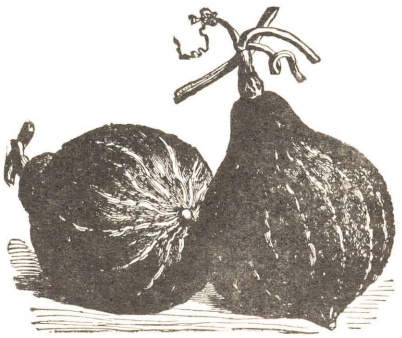
"We have pumpkins at morning and pumpkins at noon,
If 'twere not for pumpkins we'd soon be undoone."

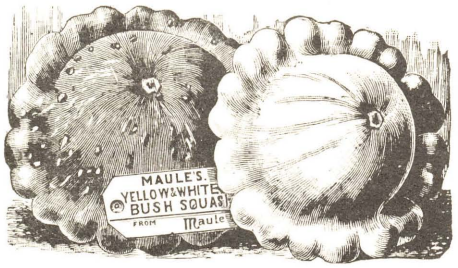


RADISHES

Black Spanish
China Rose or Rose-Colored Chinese
French Breakfast
Long Scarlet

China is the origin of the radish. This vegetable was a common food of the Egyptians, ancient Romans, and Greeks. The radish was brought here by Columbus.





SQUASH

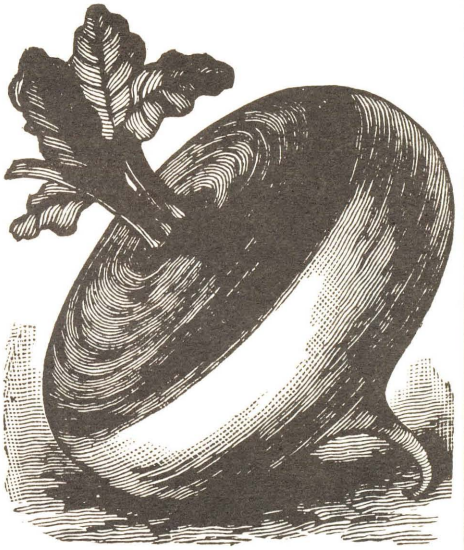
Boston Marrow
Green Hubbard
Summer Crookneck or Warted Crookneck
White Bush Scallop or White Patty-Pan

Some varieties of squash were cultivated as long ago as 6000 to 4300 B.C. Squash was a staple food of the Indian tribes all over America. European visitors to the Atlantic coast discovered summer squash growing there in the 1600's.

TOMATOES

Ponderosa
Red Pear
Yellow Plum

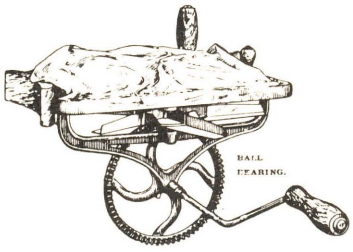
The tomato originated in the Andes of South America. Even though it was American in origin, it was thought to be poisonous and grown only for decoration. Tomatoes were popular in Europe, but Americans were afraid to try them. Thomas Jefferson grew them in 1781 and tried to convince people they were harmless. But it was not until the 1840's that tomatoes were widely used. The tomato is now our most popular home garden vegetable.



TURNIPS

Purple Top Strap Leaf

Originally from the Mediterranean, turnips were enjoyed by ancient Romans and Greeks. They were brought to North America by Jacques Cartier who planted them in Canada in 1541. Turnips were also grown by the colonists at Jamestown, Virginia, and the Massachusetts colony.



Seed sower

Take nine beans, rub each one over your warts, and then throw the beans in a well. Your warts will disappear.

Activities

1. Vegetable Concentration—Using **two** identical seed catalogs, cut out pictures of vegetables. You will need at least 20 to 22 different kinds. Cut out two of the **same** picture of a vegetable variety. Paste these pictures on pieces of tagboard or other lightweight cardboard. Cut to the size of playing cards (2½ inches by 3½ inches). Label each picture. You may wish to cover these with clear contact paper for protection. Any number of players may play. Shuffle the pack and lay all the cards face down, one at a time, so that no two cards touch or overlap at the corners. The entire surface of a table is usually necessary to make room for all the cards.

Object of the game—To locate pairs of cards of the same vegetable (two Connecticut field pumpkins, two scarlet runner beans, etc.).

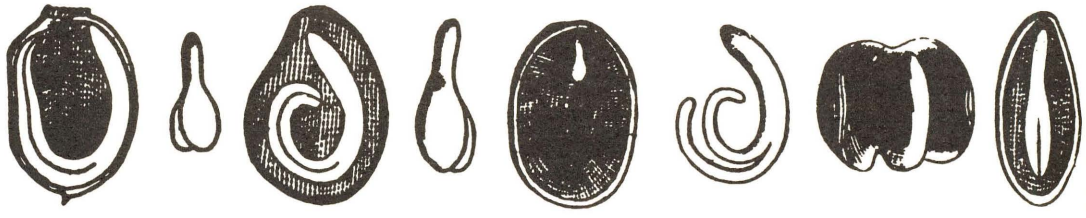
To play—Each player in turn must turn any two cards on the table, leaving the first face up until he/she has turned the second. If the two cards form a pair, the player takes them and turns up two more cards. Whenever the two cards the player turns up do not form a pair, he/she turns both cards face down again, leaving them in **exactly** the same position on the table as they were in when first turned. The turn then passes to the player on the left.

The winner is the player who has the greatest number of vegetable pairs at the end of the game.

2. You may wish to plant a demonstration heritage garden of these heirloom vegetables at a museum site, school, public library, or nature center as a club activity. What and how much you plant will depend on the amount of space you have.

3. Mystery Seed Identification—Some keys open doors. This Seed Identification Key is to help you identify the different kinds of vegetable seeds in your MYSTERY VEGETABLE GARDEN. The key will tell you the names of the different kinds of seeds.

Directions for leader: Working with a key will teach your members observation skills, how to identify some common vegetable seeds, and patience. Provide one envelope for each member. In each envelope, place three to four heirloom seeds of the following: three to four **varieties** of beans, two **varieties** of corn, and seeds of any variety of beet, cabbage (**or** radish **or** turnip **or** cress), pumpkin (**or** squash), peas, sunflower, onions, parsnip, lettuce (**or** carrot), and tomatoes. If the seeds you are using are coated with a colored fungicide, wash them with a damp paper towel and dry, so as not to mask the true color of the seeds. Have members wash their hands after handling the seeds to wash off any fungicide that they might have gotten on their hands. Seal the envelopes. Give each member an envelope along with a copy of the Seed Identification Key (page 19).



STEP 1. Carefully empty the seeds on a large sheet of white paper. Look at the seeds. List some of the ways they are different. Are there differences in size, shape, color, and texture of the seeds?

STEP 2. Group or classify the seeds that are alike into separate piles on the paper. You may need to use a pencil or toothpick. How many kinds can you find?

STEP 3. Select three to five seeds of the kind you want to identify. Observe that there are some differences in size, shape, or color even though all the seeds are the same kind or are closely related, except carrots and lettuce which belong to different plant families.

STEP 4. There are two or three choices on each step of the key. Pick the best choice and go on to the next step as directed. The choices will lead you step-by-step to the name of the seed.

Seed Identification Key

If the seeds are . . .

Step A . . . over one centimeter long (———), go to Step B.
. . . less than one centimeter long, go to Step F.

Step B . . . colored, smooth, and curve-shaped, go to Step C.
. . . flat, longer than wide, and shaped like a tear drop, go to Step E.

Step C . . . colored with spots, go to Step D.
. . . smooth, without spots, and brown . . . . KENTUCKY WONDER BEAN

Step D . . . tan with maroon spots . . . . DWARF HORTICULTURAL BEAN
. . . off-white with brown spots . . . . JACOBS CATTLE BEAN
. . . purple with dark purple markings . . . . SCARLET RUNNER BEAN

Step E . . . light tan, plain, with a line around the edge . . . . SQUASH, PUMPKINS
. . . tan with black stripes . . . . MAMMOTH RUSSIAN SUNFLOWER

Step F . . . tear-shaped, flat, with a light-colored ^ at base, go to Step G.
. . . green, round, and either smooth or wrinkled . . . . PEAS

Step G . . . yellow kernels . . . . STOWELL'S EVERGREEN SWEET CORN
. . . black kernels . . . . BLACK MEXICAN CORN

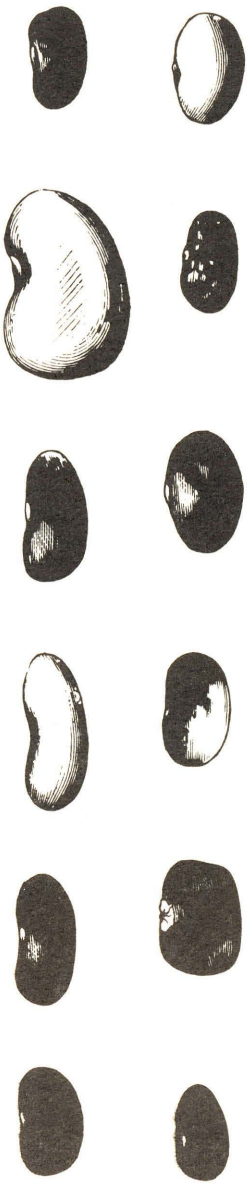
Step H . . . 5 millimeters long (—), tan, and flattened with ridges . . . . PARSNIPS
. . . less than 5 millimeters long, go to Step I.

Step I . . . brown, round or flat, and smooth . . . . RADISHES, CABBAGES, TURNIP, CRESS
. . . round and rough or flat, with lines, go to Step J.

Step J . . . roundish, rough, and warty looking . . . . BEETS
. . . rounded and angular or flattened, go to Step K.

Step K . . . black, 3 millimeters long (—), with angles . . . . ONIONS
. . . tan, flattened, long, and rounded, go to Step L.

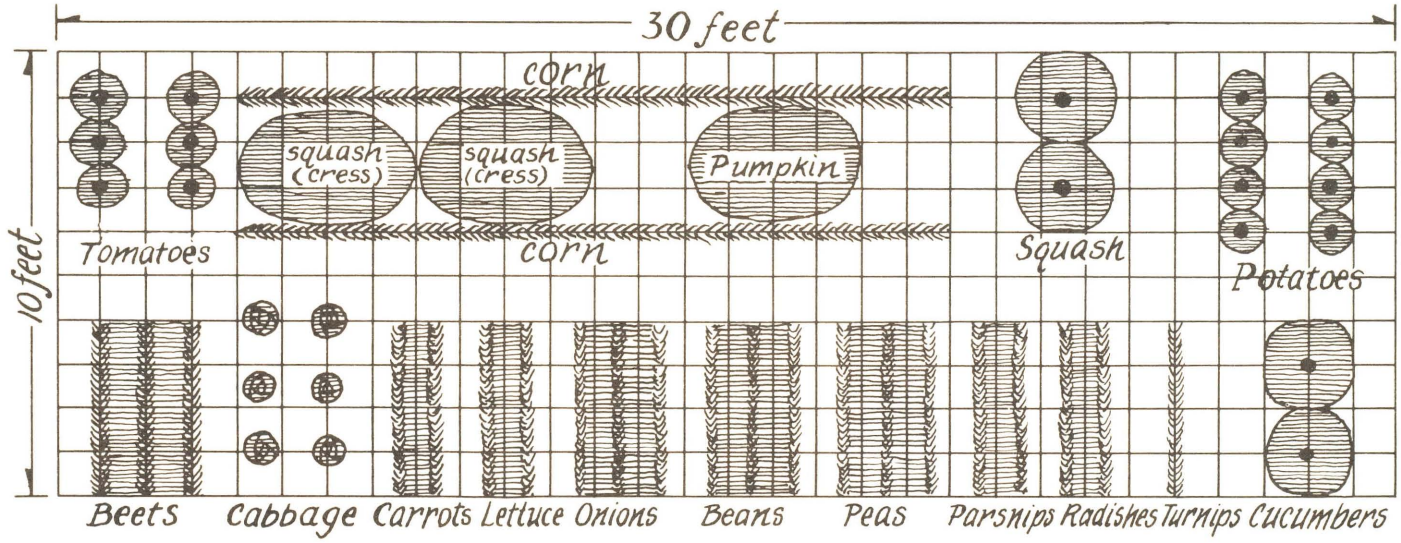
Step L . . . 3 millimeters long, thin, and flat with lines . . . . CARROTS AND LETTUCE
. . . 2 millimeters long (–), rounded, and fuzzy with no lines . . . . TOMATOES



The Heirloom Vegetable Garden

CROP	VARIETY	PLANTING
Bean	Dwarf Horticultural	4-foot row
	Jacobs Cattle	4-foot row
	Scarlet Runner (trellis)	4-foot row
Beet	Early Blood Turnip	4-foot row
	Egyptian	4-foot row
	Long Season	4-foot row
Cabbage	Drumhead Savoy	2 plants
	Early Jersey Wakefield	2 plants
	Late Flat Dutch	2 plants
Carrot	Early Horn	4-foot row
	Long Orange	4-foot row
Corn	Black Mexican	2 8-foot rows
	Stowell's Evergreen	2 8-foot rows
Cress	Curled or Peppergrass	2 4-foot rows
Cucumber	Long Green	2 hills
Lettuce	Green Boston	4-foot row
	Paris White Cos	4-foot row
Onion	Red Wethersfield	4-foot row
	Southport Yellow Globe	4-foot row
	White Portugal	4-foot row

CROP	VARIETY	PLANTING
Parsnip	Hollow Crown	2 4-foot row
Pea	Alaska	4-foot row
	Alderman (trellis)	4-foot row
	Dwarf Sugar	4-foot row
Potato	Green Mountain	2 hills
	Irish Cobbler	2 hills
	Lady Finger	2 hills
	Russet Burbank	2 hills
Pumpkin	Connecticut Field	1 hill
Radish	Black Spanish	2-foot row
	China Rose	2-foot row
	French Breakfast	2-foot row
	Long Scarlet	2-foot row
Squash	Boston Marrow	1 hill
	Green Hubbard	1 hill
	Warted Crookneck	1 hill
	White Bush Scallop	1 hill
Tomato	Ponderosa	2 plants
	Red Pear	2 plants
	Yellow Plum	2 plants
Turnip	Purple Top Strap Leaf	4-foot row



Suggested Garden Layout: Beets, cabbages, carrots, cress, lettuce, radishes, and turnips can be planted for spring and fall harvesting. Plant pumpkins and winter squash between the rows of corn and plant the cress in a circle (about 18 inches in diameter) around the hills of winter squash. Make sure that each corn variety is planted in a block of two rows.

Planting Your Vegetables

Moon Planting

Planting by the moon dates back to Biblical times and before. Since early times, some people have believed that the moon was a living creature. Each month it was thought to be slowly "eaten up" only to magically reappear whole again. This was the only way people could explain the different phases of the moon as it waned (got smaller) from full size to a small crescent. Then the cycle reversed, and the moon waxed (got bigger) into full size again.

Today we know the moon is not made of green cheese—our astronauts are certain of that. We know that the phases happen because the moon moves around the earth. It takes 29½ days to make a revolution around the earth. This makes a natural time unit for people. The word month comes from moon. Monday, the first day of our week, comes from Moon-day.

Moonlight is reflected sunlight. Since the moon is a round body, half of it is lit up by the sun's rays; while the other half of it is in darkness. When the moon is in a position that we can see the entire lighted half, we say it is in the full-moon phase. When the lighted half of the moon faces away from us, we say the moon is in the new-moon phase. In between these phases are the crescent or quarter moon and the gibbous moon or last quarter phases.

People who live along the ocean know all about tides. Those who live inland are unaware of tides. However, our inland lakes and streams do have small tides. Lake Superior has a tide of about two inches. The moon's gravity pulls at the water in the ocean and seas. Then the water piles up; in most places it piles up several feet. This piling up is called a high tide. The pull of the moon's gravity on the waters of the earth is the main cause of the tides. The high tides come about every 12½ hours in the oceans all over the earth.

Some people believe that as the moon controls the tides it also controls the water table. As the tides get higher, the water table in the earth rises. Therefore, at the full moon, the ground would be expanded with moisture. They believe that if you plant something which grows above ground on the increase of the moon, there will be more moisture in the soil and the plant will grow better.

Phases of the Moon

During the **waxing moon** (first quarter), the horns or ends point left. This means it is approaching the full moon.

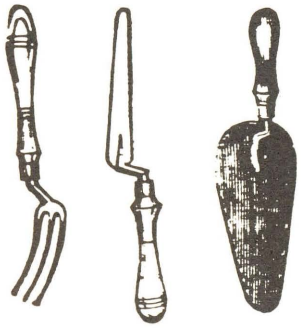
During the **waning moon** (third quarter), the horns point right. This means it is approaching the new moon.

A **harvest moon** is the first full moon after the autumnal equinox; it occurs on or about September 21. For several nights in a row the moon rises at almost the same hour. This large orange moon seems to appear larger than the moon of other seasons. It rises about the time the sun sets. This extra light gives farmers more light to work by when harvesting their crops.

A **hunter's moon** is the full moon following the harvest moon. It's not quite as bright as the harvest moon, but it gives extra light to hunt by.

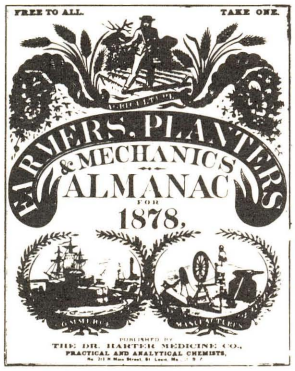
A **blue moon** occurs once in a great while when two full moons take place in the same calendar month. Hence the phrase "once in a blue moon" means once in a great while.

You may want to experiment with some activities of moon planting. Some people believe in planting by the moon. Others say it's bunk. Try it yourself.



18th century garden tools

Early Indian garden tools



Old Farmer's Almanac

You will need a copy of the *Old Farmer's Almanac* for planting dates. You can purchase these inexpensive guides at a bookstore. Sometimes hardware stores will give them away. Check the almanac for the phases of the moon and determine your planting dates.

Make a list of the plants you will plant in the new or light of the moon and in the dark of the moon. Set dates for planting and be sure to consider frost free dates and warm- and cold-weather crops.

Planting Vegetables

Plant the following vegetables by the dark of the moon (underground crops):

Beets	Potatoes
Carrots	Radishes
Onions	Turnips
Parsnips	

Plant these vegetables by the light of the moon (above ground crops):

Beans	Peas
Cabbage	Pumpkins
Sweet corn	Squash
Cucumber	Tomatoes
Lettuce	

Some farmers believe that plants which grow above ground (like peas, beans, cucumbers, or melons) should always be planted in the morning so that they will grow upward with the rising sun. Plants which grow underground (like potatoes, onions, and radishes) should be planted in the afternoon so they will grow downward with the sinking sun.

Activities

1. Keep a daily diary with dates for a full month. Make 29 circles. Draw the shape of the moon in each circle. Plant lettuce and radishes once a week during all four quarters of the moon. Keep a record to see if there is any difference in their growth. Keep track of rainfall and temperatures also.

2. Interview people who still plant by the moon. Ask why they do this. When do they plant specific crops? Try planting at the same time they do.

Companion Planting

Companion plants are those plants that influence each other for better or for worse when planted together.

For centuries gardeners have noticed that certain vegetables seemed to do better growing near one plant, while not doing well growing near another. There is a lot of folklore surrounding companion planting. Only a small amount of scientific research has been done to test these folk beliefs.

There are two general types of companion planting. **The first is growing crops together for shade or support.** The North American Indians planted corn, beans, and squash together. These vegetables were known as "the three sisters." The corn provided support for the beans, the beans supplied nitrogen to the others, and the shade of the squash vines prevented the growth of weeds and evaporation of moisture from the soil's surface. By putting all three crops together, the size of the garden was decreased by two-thirds and watering was easier. You can try planting an Indian garden by referring to the information on page 29.

Another example of this type of companion planting is planting several different crops in the same row. These different crops are harvested at different times. You might try cress, lettuce, and cabbage. The

cress would be used first, then the lettuce, and finally the cabbage. As each crop is thinned out by being used, the remaining crop or crops will have more room to grow. You also save space in your garden this way. You might try radishes, lettuce, and cabbage, or radishes and carrots. Since radishes come up quickly, they also help show you where the row is. Lettuce and tomatoes are good companions. The lettuce grows quickly and will not shade the slower growing tomatoes. The lettuce will be used up by the time the tomatoes need more room.

The second type of companion planting is a chemical one. Some plants release chemicals that may help or hinder other plants. Some plants may release chemicals that may deter insects or other pests. For example, scientists have now shown that marigolds have a root exudate (juice) that will repel and kill some species of nematodes. Nematodes are tiny worm-like creatures that will attack plant roots. Scientists also know that black walnut tree roots secrete a chemical that stunts the growth of tomatoes and many other plants.

Gardeners have long known that pyrethrum powder, an extract from certain chrysanthemums, is a safe insect repellent. According to historical records, pyrethrum may have been used by the Chinese almost 2,000 years ago. Scientists know that the mint extract of the plant called pennyroyal may repel ants.

Researchers are working to see if some of these plant secretions can be used on a large scale to prevent weed growth for certain crops. This science is called alleopathy.

Some companion plants like beans and peas (legumes) have nitrogen-fixing bacteria nodules on their roots. When plowed down or turned under they provide nitrogen to the soil which reduces the need for fertilizer.

Sometimes a few plants of a favored species are grown in or around a main crop to attract harmful insects and divert them away from the crop you are trying to grow. This type of companion planting is called trap cropping. Nasturtiums planted with squash are said to attract squash bugs and keep them away from squash plants. They may not repel the bugs; the squash bugs simply like the nasturtiums better. Thus, they are trapped or stopped by the nasturtiums.

Companion planting is the cause of many disagreements between gardeners and scientists. So little research has been done that it is difficult to separate the "fact from the fiction." The following chart lists plants that have been reported to be good companion plants.

Good Companions

Vegetable	Companions
All crops	French and African marigolds
Beans	Beets, cabbage, carrots, cucumbers, potatoes, radishes
Beets	Beans, onions
Cabbage	Beans, cucumbers, potatoes, onions
Carrots	Beans, onions, lettuce, peas
Corn	Beans, cucumbers, peas, potatoes, pumpkins, squash
Cucumbers	Beans, cabbage, tomatoes
Lettuce	Carrots, onions, radishes
Onions	Beets, carrots, lettuce
Peas	Carrots, corn, potatoes, radishes, turnips
Potatoes	Beans, cabbage, corn, peas,
Pumpkins	Corn, beans
Radishes	Lettuce, peas, squash, beans
Squash	Corn, radishes, beans
Tomatoes	Carrots, cucumbers, lettuce
Turnips	Peas

On the fourteenth day of July, sow your turnips, wet or dry.

Companion planting with corn and beans

Not-so-good Companions

Vegetable	Not-so-good companions
Beans	Onions
Beets	Pole beans
Cabbages	Tomatoes
Carrots	Dill
Corn	Tomatoes
Cucumbers	Potatoes
Jerusalem artichokes	All other plants
Onions	Peas, beans
Potatoes	Squash
Sunflowers	All other plants
Tomatoes	Corn, cabbage

Activities

1. You might want to test the following folklore companions in your garden by using control groups:

—Chives and garlic are said to keep away insects.

—Nasturtiums will keep squash bugs away, some folks say.

—Mint repels ants.

—Sage repels the cabbage worm butterfly.

2. Keeping in mind the garden seeds you are going to plant, read through the companion plant list. Now make a diagram of your garden using some of these companion planting ideas. Keep a careful diary as to what and where and when you planted. Also plant a control plot so you can check your experiment. Keep accurate records. You may wish to take before and after photos or photos of the plants at different stages. This would be a good experiment to write up for a report or for the Young America Garden Contest or other contest.

3. Interview some people to see what they mean by companion planting and what they use as companion plants. Try at least one of their methods in your garden. You can also record the information on short-item cards and send to the 4-H FOLKPATTERNS office. (Refer to 4-H 1222, *4-H FOLKPATTERNS Leader's Guide,* for more information.) Try to see how many different combinations are used in your area.

Protecting Your Plants

After crops are planted they need to be cultivated and protected. The gardener or farmer helps nature in some ways and hinders it in others. When there is not enough rain, watering the garden to promote seed germination is one way to help. This may include soaking seeds overnight before planting, prewatering the seedbeds, watering after planting, and making irrigation ditches. The watering can be done with pails, sprinkling cans, hoses, and other containers. The time of day to water is often determined by traditions; most recommend early morning or evening, since the mid-day sun bakes some wet soils and results in a cement-like consistency.

You can aid nature by providing supports for plants. This can involve growing beans on corn or tying plants to poles, stakes, trellises, and fences.

There are other cultivating aids. People often plant more than they need, then thin the plants. Some people keep bees to make sure their crops will be pollinated. They also enrich the soil by fertilizing with animal, mineral, and compost products. They rotate crops from year to year, and they also hoe around plants to loosen the soil.

There are many protective measures you can take to help plants grow. Some methods discourage natural pests such as insects, birds, rabbits, deer, livestock, and weeds. Some people make scarecrows from old clothing hung on posts and stuffed

with straw. When placed in gardens, these frighten away birds and deer. Some people use noisemakers such as clackers, ratchets, tin pans, chimes, and windmill thumpers. Putting nets and threads around trees will repel birds. Plants may be covered with wire baskets or plastic milk or bleach jugs (with bottoms removed) to keep out rabbits or protect from the frost. Hoeing and chemicals are used to remove or prevent weeds.

Fences as well as hedges were more commonly used in the past to keep wandering livestock and deer out of gardens. Today it is more common for the livestock to be fenced in, rather than the garden. Fences were made of brick, stone, stump, rail, picket, post, and wire. Sometimes these were electric fences. Communities often have one special kind of fencing, usually made from materials that are readily available in the area.

Scarecrows

Scarecrows are truly American folk art. North American Indians were using scarecrows before the settlers arrived. Scarecrows have changed little over the years. Many writers have written about scarecrows, but the most famous is the one in *The Wizard of Oz* who was looking for a brain.

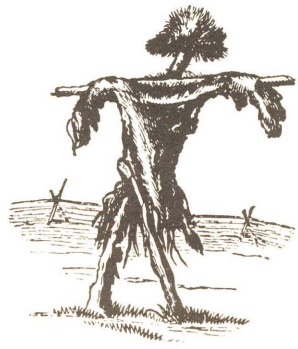
Scarecrows are ephemeral creatures —that is, they don't last more than one season. They are like jack-o-lanterns and pumpkin people. They're here for only a short while.

The farmers in early America used them to scare away birds. By using moving pieces of brightly colored clothing, farmers hoped the birds would stay away. If the scarecrow looked like a farmer, it was because it was wearing the farmer's clothes. Most of the scarecrows in the early days were male, but today many female scarecrows can be seen in the countryside.

Activities

1. To make a scarecrow, you need two sticks or broomhandles. Lash these together in the shape of a cross. Now dress this frame with old clothes. You are more likely to keep birds away if you add something that will flap in the breeze. Many people use pieces of aluminum foil, old pie pans, scarves, tin cans, or even bells. You can stuff the clothes with straw, dry grass, or leaves. For the head use an empty milk or bleach bottle, a stuffed plastic bag, a flower pot, a Halloween mask, or a pie pan. An old mop makes great hair. The scarecrow also needs a hat—any old one will do.

Attach the upright pole firmly in the ground. Now watch and enjoy. Maybe your scarecrow will be so frightful that, as in the old farmer's folktale, the birds will bring back all the seeds they had taken the year before! Be sure to take a picture of your scarecrow. You could also take photos of other scarecrows in your area.

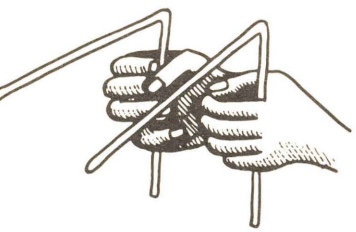


Old-fashioned scarecrow

2. What kind of fences do you find in your area? You might like to keep a drawn or photographic record of the different types you discover.

3. Interview people and have them describe how they protect their plants. Do they make any "home remedies"?

A "worm" fence



A coat hanger dowsing instrument

What are they? You might want to try these in your own garden. Use a control group for experimenting. Here are some folk protection methods you might try:

—Soapsuds will keep off aphids, scale, and mealy bugs.

—Sour milk will keep away worms.

—A tea made of hot pepper, onions, or garlic will keep away worms, insects, and birds.

—Mothballs will keep away rabbits.

—Hair clippings will keep away deer.

Dowsing

A dowser is one who locates water below ground by walking back and forth over an area with a Y-shaped dowsing instrument until the instrument moves all by itself. Europeans have practiced dowsing for centuries. The early colonists brought the secret of dowsing to America. They dowsed with witch hazel sticks, which may have originated the term "water-witching."

Dowsing with a hickory stick

Many scientists scoff at dowsing. However, Albert Einstein believed in dowsing. He said someday it would prove to be some sort of electromagnetism. Today no one really knows how it works.

Often a farm family would not select a building site until they were sure there was a source of water. They consulted a dowser to find the best site to dig a well. Today dowsing is used to locate underground pipes, water, and sewer systems.

Using a twig is quite difficult, and it is said only 1 in 10 people have dowsing powers. However, almost everyone has success in finding underground water pipe systems using coat hangers.

Activities

1. Make your own dowsing instrument from two coat hangers. Make two cuts just below the hook. Bend one arm at a right angle and the other one at a straight angle. Hold one rod in each hand. Hold the short ends loosely in your fist. When the coat hanger rods start moving either toward you *or* away from, you are over water.

2. Interview someone in your community who dowses for water—perhaps a farmer or a well digger. Ask if you can watch them work. Record your experiences. Find out how they learned to dowse.

3. Play a game of dowsing. Have a friend line up several containers with only one filled with water. Cover them all with a towel or anything just so you cannot see which container has the water. Now try dowsing over the containers and see how you do at locating the right one.

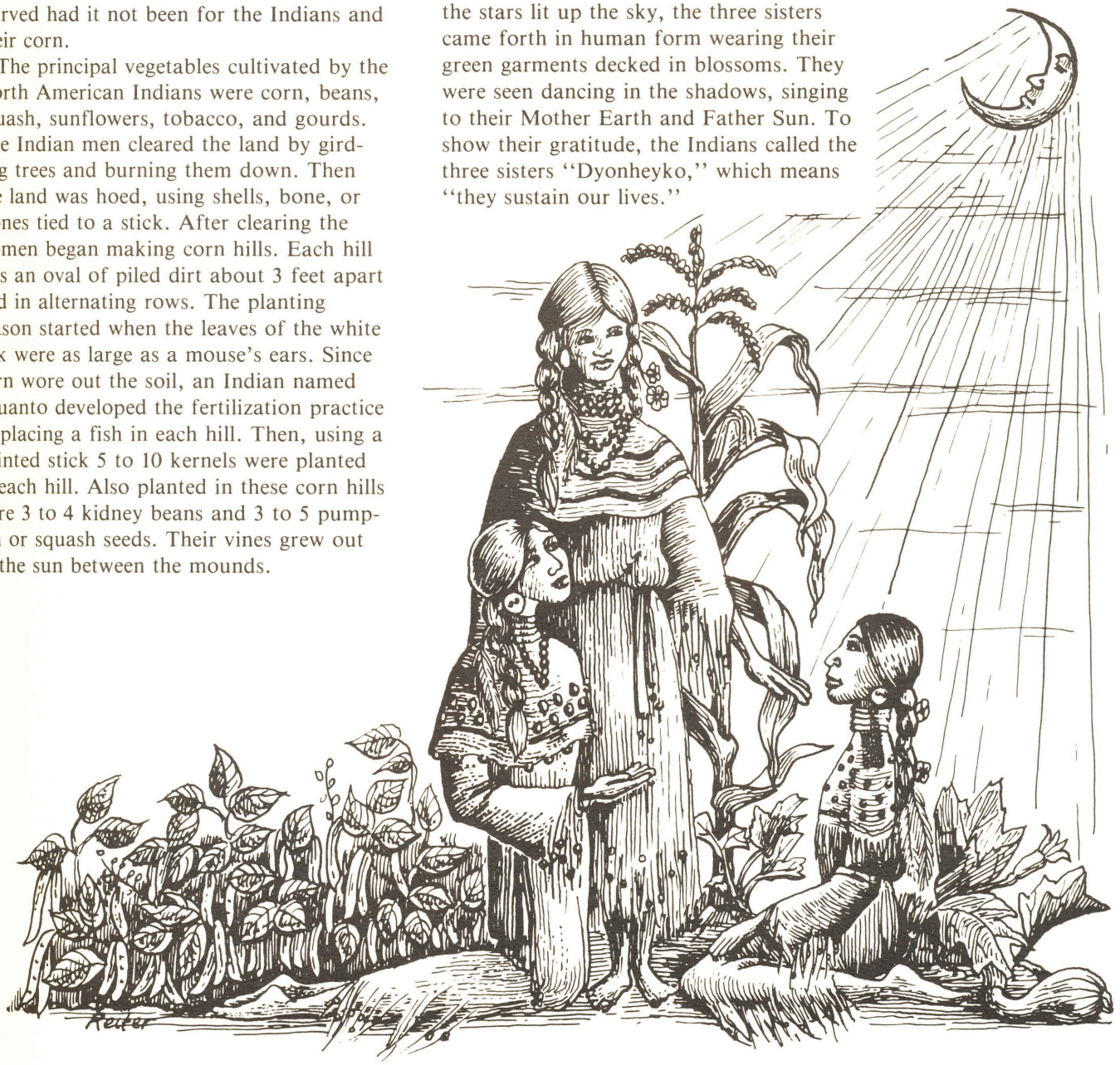
4. Try using a forked twig. The rod should have a diameter of a pencil and be about 18 inches long. Trim off all the smaller twigs. Grasp the branch with your palms open. Swing it upward until the end is slightly higher than the forks at your side. When the rods start moving you are over water. Are you the 1 in 10?

An Indian Garden

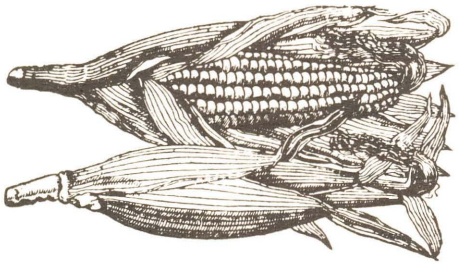
On November 5, 1492, on the island now called Cuba, two members of Christopher Columbus's crew returned to the Santa Maria and reported that the natives had a "sort of grain they called maiz which was well tasted, bak'd, dry'd, and made into flour." Little did they know how this discovery would change the world. Later the settlers at Jamestown, Virginia, and the Pilgrims in Massachusetts would have starved had it not been for the Indians and their corn.

The principal vegetables cultivated by the North American Indians were corn, beans, squash, sunflowers, tobacco, and gourds. The Indian men cleared the land by girdling trees and burning them down. Then the land was hoed, using shells, bone, or stones tied to a stick. After clearing the women began making corn hills. Each hill was an oval of piled dirt about 3 feet apart and in alternating rows. The planting season started when the leaves of the white oak were as large as a mouse's ears. Since corn wore out the soil, an Indian named Squanto developed the fertilization practice of placing a fish in each hill. Then, using a pointed stick 5 to 10 kernels were planted in each hill. Also planted in these corn hills were 3 to 4 kidney beans and 3 to 5 pumpkin or squash seeds. Their vines grew out to the sun between the mounds.

There is an Iroquois legend that the maize, the bean, and the squash are three loving sisters who must always live together and be happy. The older sister (maize) is tall and graceful. The next younger sister (bean) loved to twine about her and lean on her for strength. The youngest sister (squash) rambled at the feet of the others and protected them from prowling enemies. When the moon dropped low and the stars lit up the sky, the three sisters came forth in human form wearing their green garments decked in blossoms. They were seen dancing in the shadows, singing to their Mother Earth and Father Sun. To show their gratitude, the Indians called the three sisters "Dyonheyko," which means "they sustain our lives."



Vegetables to Grow



MAIZE OR CORN

Black Mexican or Black Sweet (a descendant of early Indian corn)
Stowell's Evergreen

Maize or corn is the greatest gift the Indians gave us. All six kinds of corn (pod, pop, flint, dent, flour, and sweet) were growing here before the settlers arrived. You may wish to grow sweet corn in your mound.

You may want to grow popcorn or ornamental corn (Indian corn). The early varieties of Indian corn were red, blue, yellow, white, black, orange, purple, and many shades in between. We use ornamental corn now just for decoration.

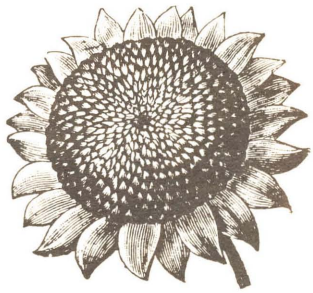
BEANS

Kentucky Wonder
Scarlet Runner

The Indians grew two types of beans—pole and bush. There were many sizes, shapes, and colors in these types. For your mound you may want a pole or climbing type.

JERUSALEM ARTICHOKE

The Jerusalem artichoke is a native of our Great Plains. The Italians gave it a name that meant "turning to the sun" that the English thought sounded like Jerusalem. In some supermarkets today these are called "sun chokes."



SUNFLOWERS

Mammoth Russian

The early European explorers noticed the yellow flowers turn their "faces" toward the sun, thus the name sunflower. The French explorer Champlain first reported this plant in 1605 after seeing it on Cape Cod being cultivated by the Indians. When Champlain visited the Indians near Lake Huron, he discovered them cultivating the sunflower. They used the fibers from their stalks and valued their seeds for oil and food.

PUMPKINS & SQUASH

Pumpkin Varieties

Connecticut Field (a direct descendant of the one the Indians gave to the Pilgrims)

Squash Varieties

Boston Marrow
Green Hubbard
Summer Crookneck or Warted Crookneck
White Bush Scallop or White Patty-Pan

These are closely related. To keep squash and pumpkins for year-round winter use, the Indians cut them into strips and dried them in the sun.

GOURDS

Gourds were grown by the Indians for uses as mixing bowls, cups, ladles, rattles, and masks. Grow mixed varieties. Only the small fruited varieties mature regularly in southern lower Michigan.

Activities

1. In early spring when the leaves of the white oak are as large as a mouse's ears, prepare a mound of soil 2 feet wide and 1 foot high. In the center, place 6 to 8 kernels of corn. When the corn is 10 to 12 inches high, prepare two more mounds 2 feet wide and a foot high and plant bean seeds. Do the same for the squash and pumpkins on separate mounds. Plant sunflower seeds and artichoke tubers around the entire garden. Keep as far away from the central mound as possible. You need the maximum amount of light to reach the garden. Refer to the drawing below.

The beans may need help at first to climb the corn, so start the tendrils climbing on the stalks. Thin the corn to the four strongest plants, the squash to the two strongest plants in each hill, and the beans to the four strongest plants in each hill. Thin the sunflowers to about 1 foot apart and the artichokes about 6 inches apart.

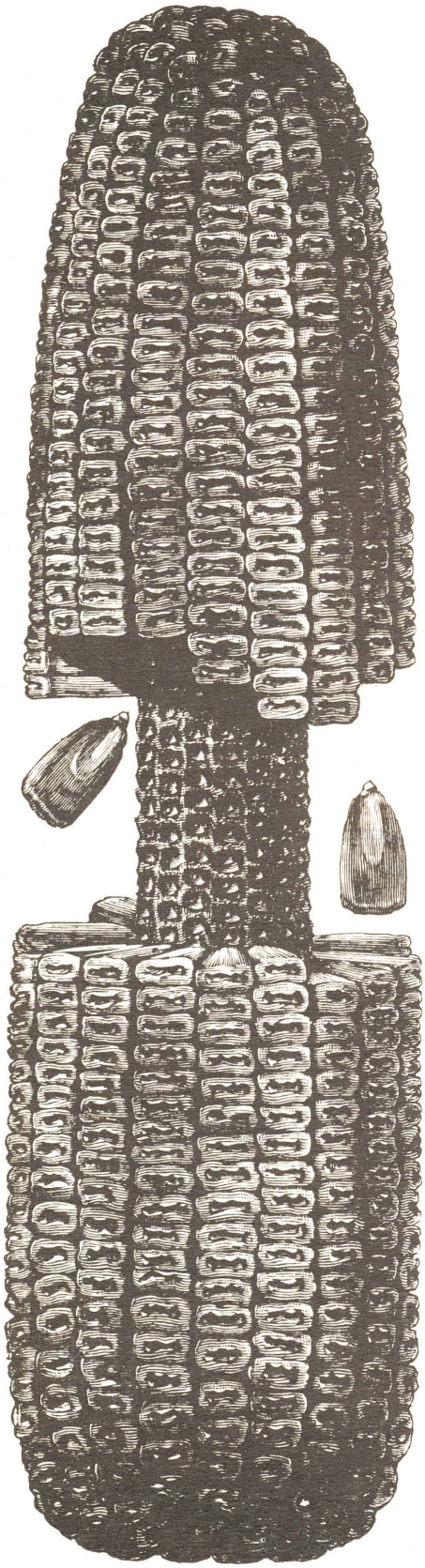
Your crops will be ready to be harvested at different times. If you plant sweet corn, harvest it while it is still tender. Harvest the beans when the pods are 4 inches long for fresh or dry for seeds, and the squash (if summer) when it's 6 inches long. Harvest pumpkins, winter squash, and gourds when their leaves fall off, but before a heavy frost. The sunflower seeds will be ready when their heads turn brown and before the seeds drop off. The Jerusalem artichokes should be dug any time after the frost (until the ground freezes hard) and again in early spring after the ground thaws out and before the tubers start to grow. Jerusalem artichokes may become weedy so be sure to not let them multiply too much. Harvest the gourds carefully, making sure the stem is still attached. Store these in a cool dry place until you hear the seeds rattle inside.

2. Interview persons of North American Indian ancestry and ask about their gardens. Have they saved any seeds over the years? What are they? Where did they originate from? Maybe they will share some with you.

3. Perhaps you know someone in your community who makes corn husk dolls. Invite that person to your next club meeting to show you how to do it. If you can't locate someone, try the following directions.

a. Save your corn husks from your corn. Use husks that are dry. If they are covered with mold, soak them overnight in a weak solution of bleach.
b. When you are ready to start, soak the husks in water for a few hours.
c. Fold several long strong husks in the middle. Tie a thin strip of husk or a piece of string near the fold to make a head.
d. Under the tied strip put two or three smaller husks for arms. Tie another strip below the arms. Tie strips at each end for hands.
e. Shape the bottom half into a long dress or legs. If the doll is a boy tie off feet.
f. Use corn silk to make hair. Attach it with white glue.

If cornhusks cling tight to the cob, a hard winter is coming.



4. Try preparing some Indian foods. Fry some squash blossoms, have a popcorn snack, or make succotash. Ask North American Indians to share their recipes with you. Make an exhibit of pictures of your Indian garden and Indian recipes.

Succotash

The colonists quickly adapted a mixture of boiled beans and corn sweetened with bear fat as a staple dish. The Indians called it "m'sickquotash," but to the English it was succotash.

1 strip bacon
1 onion chopped
2 cups shell beans*
1 cup water
2 cups corn
2 tablespoons butter or margarine
1 teaspoon salt
pepper

Put bacon, beans, salt, and onions, in saucepan. Add water. Bring to boil, and simmer covered 20 minutes. Stir in corn, butter, and pepper; simmer 10 more minutes. (Serves 4)

*Shell beans are immature beans with pods usually past the tender stage but before the seeds inside have become "dry" beans. Remove the pods to use.

Squash Blossoms

1 cup milk
1 egg
1 tablespoon flour
salt and pepper
2 to 3 dozen squash or pumpkin blossoms
1/2 cup cooking oil

Pick male squash blossoms in midday while they are fully open. To distinguish the male from the female blossoms, look for the bulge at the base of the flower below the petals. This bulge will grow into a squash and is the female blossom. The stem of the male blossom is thin. Pick with one inch of stem. Keep in ice water until you are ready to cook. Pat blossoms dry.

Mix together milk, egg, flour, and seasonings. Beat until batter is smooth. Gently mix the blossoms in batter. Heat oil in frying pan until hot. Fry blossoms a few at a time until golden brown. Drain and serve.

Jerusalem Artichokes

Jerusalem artichokes may be eaten raw or cooked. You do not need to peel them; just clean them with a stiff brush. Raw chokes may be used with dips, added to a salad, or tossed with cooked vegetables.

Herbed Chokes

1 pound Jerusalem artichokes (sliced or whole)
1/2 cup oil
2 tablespoons chopped chives
2 tablespoons chopped dill
1/4 cup cider vinegar
1 clove garlic, chopped (optional)

Boil artichokes in water about 20 minutes. Drain. Combine chokes and seasonings in skillet with oil. Saute for 15 minutes. Add vinegar and simmer 5 minutes longer. Serve hot.

S.O.S. (Save Our Seeds)

Many years ago, it was common for many gardeners to collect and save seeds from vegetables and flowers that they grew in their own gardens. Seeds of nonhybrid varieties of snap beans, lettuce, peas, and tomatoes can commonly be saved because these vegetables are usually self-pollinating. This means that seeds saved from these plants should grow into plants that are identical to the parent plants.

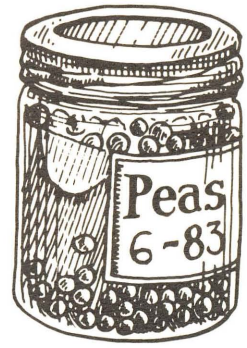
Seeds should not be saved from cross-pollinating vegetables such as summer squash unless they are separated by a considerable distance from other squash and pumpkin varieties. Some insects, such as bees, carry pollen from one plant to another, and cross pollination usually occurs. Seeds saved from a fruit that developed from the ovary of a cross-pollinated flower will grow into plants that will be somewhat different from either parent. For example, pollen from a male flower on a green zucchini summer squash could pollinate a female flower of a yellow straightneck summer squash. The seeds from that cross would produce a variety of seedlings that could bear yellow, striped, green, speckled, or greenish-yellow squash. The shape would remain the same. More interesting crosses would be a scallop summer squash crossed with a straightneck summer squash or a yellow crookneck crossed with either a green zucchini or a round or scallop summer squash.

Collecting, Extracting, & Storing Seeds

It is very easy to collect and extract pea and snap bean seeds. Just let the pods mature on the plant and, just as they start to split open, pick the best shaped long pods and put them in a protected area having good air circulation. Let them dry until they quit shrinking and are very hard. Be sure to protect them from birds and other animals.

Tomatoes are also quite easy to collect. Select nicely shaped, well-ripened fruits and mash the fruits through a screen or strainer to get rid of the clear, wet material around the seeds. Then dry the seeds in a protected area for many days.

In order to store seeds successfully, they must be very dry before being placed in a cool location (32°-50°F) in a tightly covered jar. Your refrigerator is fine. Place two tablespoons of powdered milk in a paper envelope and place the envelope in the jar. The powdered milk will absorb the moisture from the air inside the jar and keep the seeds dry. Be sure to label each container as to the kind and variety of vegetable and the date placed in storage. Check them occasionally because the seeds will mold if not dried sufficiently. Dispose of any seeds that mold.



Seed Longevity

How long a seed can remain alive varies with the kind of plant and storage conditions. Most garden seeds won't remain alive (viable) for over 20 years and some for only about one year. The table below shows how long some common vegetable seeds can be stored (longevity) under proper conditions.

Longevity of Vegetable Seeds*

1 year	2 years	3 years	4 years	5 years or longer
onions	sweet corn	beans	beets	cress
parsnips		carrots	cabbage	cucumbers
		peas	pumpkins	lettuce
			squash	radishes
			tomatoes	
			turnips	

*Although seeds may still germinate beyond these times, the seedlings probably won't grow as vigorously as from fresh seeds. Seeds would also probably need to be sown thicker than usual to get a satisfactory stand.

William J. Beal

Over 100 years ago, William J. Beal, professor of botany and horticulture at Michigan Agricultural College (now Michigan State University), wanted to know more about seed longevity. In 1879, Dr. Beal, the "granddaddy" of seed savers, mixed seeds of 23 kinds of plants (mostly weeds) with moderately moist sand. He placed the mixture of seeds and sand in 20 pint bottles and then buried them about 20 inches deep in the ground. The mouths of the bottles slanted downward to prevent water from filling the uncorked bottles. The bottles were buried near Beaumont Tower on the MSU campus in East Lansing. After 50 years, seeds of five plants still germinated. In 1980 the bottles were opened again and the seeds of only one species germinated (moth mullein). In 1990, the seeds in another bottle in this ongoing experiment will be tested.

Share Your Findings

If you "discover" an heirloom vegetable variety, you should report your find in the Seed Savers Exchange. This group will record your information and see that the variety is kept alive. If you would like more information or if you would like to become a member, write to Seed Savers Exchange, Kent Whealy, Rural Route 2, Princeton, MO 64673.

Activities

1. Collect and save seeds from at least two self-pollinating vegetables and then sow them next year and see if they produce fruits similar to their parent plants.

2. Interview gardeners who collect and save their own seeds. Find out what kinds they save, how long they have been doing it, and how they got started.

3. You will discover that your heirloom seeds are very colorful. Make a display of them to show them off year round. Collect the seeds from your plants and dry them in the sun. You can purchase wooden "memory" boxes at craft stores and fill each section with a seed variety. Or you can make a box of your own from scrap lumber. Paneling works well because it is thin. Make a back and sides and dividers. Fill each compartment with your seeds. Now cover the box with glass. Attach a hanger and enjoy it all year. These make great gifts.

4. If you meet someone who is a "seed saver"—that is, a person who grows his/her own variety, you will want to preserve not only the seeds but a little of the story too. If there is a special family recipe for this vegetable, collect it. Your group might want to compile these into a cookbook or a calendar. You might ask that the person write the recipe in his/her own handwriting. You could reproduce it in that form. Your club could then use these cookbooks or calendars for fundraising. If there are stories attached to the seeds or recipes, be sure and include them.

Garden Lore

Examples of garden lore appear throughout this bulletin. Following are a few more examples:

Cool as a cucumber
Red as a beet

When you cross a bridge, make a wish and throw a raw potato into the water. Your wish will come true.

A corn cob worn behind the ear is good luck.

Your ears are like flowers—cauliflowers!

Peaches, plums, pumpkin butter,
Little Johnny Green is my true lover,
Little Johnny Green, give me a kiss,
When I miss, I miss like this.
(Jump rope rhyme)

If wishes were horses,
Then beggars would ride;
If turnips were watches,
I'd wear one by my side.

Peter, Peter, pumpkin eater.
Had a wife and couldn't keep her;
He put her in a pumpkin shell
And there he kept her very well

Hot boiled beans and very good butter,
Ladies and gentlemen come to supper.

What's the difference between a gardener and a billiard player:
One minds his peas and the other his cues.

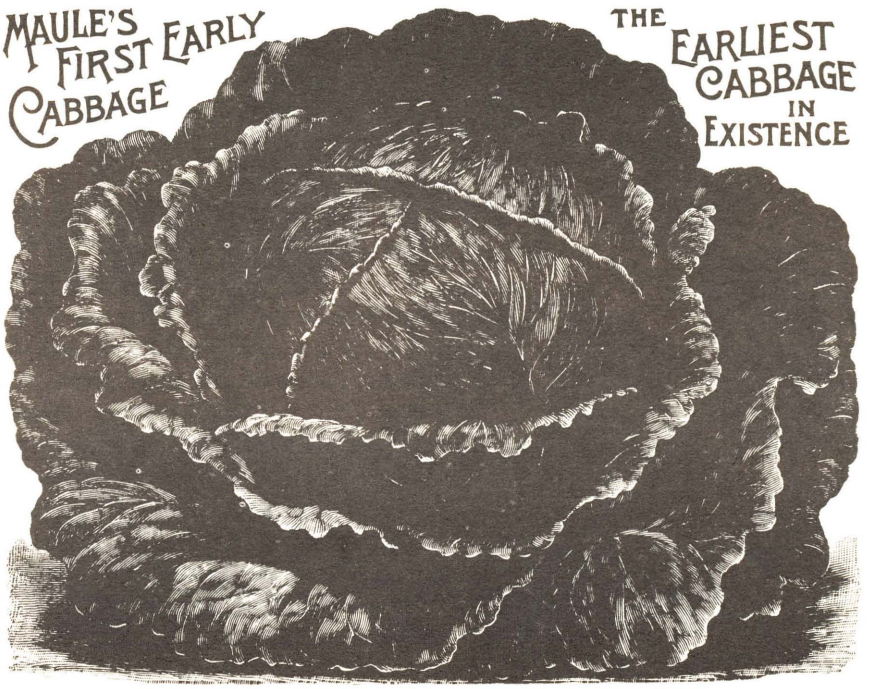
Activities

1. Collect garden lore on short-item cards. Then send the cards or copies of the cards to 4-H FOLKPATTERNS, The Museum, Michigan State University, East Lansing, MI 48824. Or publish a booklet of "Garden Lore in _____ County." If possible include photographs of gardens and gardeners you have interviewed.

2. At a county fair, a harvest festival, or another community event, set up a folklore collecting center (see 4-H 1222, *4-H FOLKPATTERNS Leader's Guide,* page 18). Print some garden sayings on posterboard to catch people's attention. Then ask them to write down their garden lore on short-item cards. Send the cards to the 4-H FOLKPATTERNS office at MSU.

3. Why does Santa Clause have three gardens? So he can hoe, hoe, hoe! Meet my friend Rudy Baga. Did you ever see a celery stalk? Or a tomato paste? Or an egg plant? Or a heart beet? Do you carrot all for me? These and many other "vegetable" jokes have been around for years. They are kept alive from one generation to another by passing them along by word of mouth. See how many jokes you can find. Who told them to you? Where did they come from?

One for the blackbird,
One for the crow,
One for the cutworm,
And one to grow.



The Harvest

Reaping the Rewards

Harvest time—the main reason for planting the crop. The time to harvest depends on several things. Sometimes the gardener will harvest most of the crop when it is fully mature. But the gardener will also let certain plants "go to seed" to save the seed for the next year. Some people harvest as they planted—in the dark or the light of the moon. They carefully check the crops for clues of ripeness. Watermelons are thumped. Tomatoes are squeezed. Beans and peas are lightly pulled. If they break off, they are mature enough to pick.

When the harvest was completed, it was time to celebrate! These celebrations included festivals, "bees," fairs, and markets. Festivals can be both religious and social in nature. Thanksgiving is perhaps the best-known religious observance of the harvest season in America. Harvest balls or dances used to be popular. Garden shows, festivals, and fairs are more common today. Many festivals celebrating the harvesting of a special crop are held throughout our state. These include events such as husking bees, asparagus festivals, and rhubarb festivals. Each centers around its theme based on a food important to the area.

Another way in which food production and harvesting are still celebrated is through exhibition and competition at county fairs. Here the harvested crops are either shown fresh or prepared into tasty dishes. These can be seen and appreciated by the entire community. The growers and processors receive ribbons as an award for their efforts. Fairs also may provide opportunities for selling the harvested food.

Activities

1. If there is a special food festival in your community, interview someone who can tell you how it started. Is there a special recipe that goes with the celebration? What unusual or different kinds of vegetables do various ethnic groups grow? How are these preserved in a traditional way?

2. Perhaps you will want to interview someone who remembers a harvest celebration, like a husking bee, that is no longer observed. Have them describe the celebration to you.

3. You may want to have a harvest festival to show off your produce. Invite your family and the persons you interviewed. You may want to enter your produce at the county fair, a mall show, Achievement Days, local garden contests, or a project in a science fair. You may wish to enter one of your projects in the Young America Garden Contest. If you have taken photographs, you can explore 4-H photography project activities or enter the National Junior Horticulture Association (NJHA) Photo Contest.

4. Arrange a display of garden photographs you have taken. Pictures could be taken of the following:

- — How people protect their gardens from pests (scarecrows, metal pie pans, etc.)
- — Methods used in planting (companion planting, etc.)
- — Special homemade gardening tools
- — Especially beautiful or bountiful gardens
- — Clothes or outfits people wear while gardening
- — Gardens made in unique locations (alleys, rooftops, patios, windowsills, etc.)

Photos should be labeled with location of garden, gardener's name, date, and photographer's name. After the display is over, photographs could be submitted to the 4-H photography project activities (information available from county Extension office) or to the NJHA Photo Contest.

5. Arrange for a display of photos of community or family events related to harvest celebrations. You could also arrange a show-and-tell table. Ask people to bring in photographs from family albums, awards won from county fair entries, newspaper clippings on past local harvest events, garden diaries, old seed catalogs, old fair books, garden implements, etc.

6. Report your heritage gardening findings. If your local newspaper carries a regular column on gardening, ask the columnist to attend and report on your harvest festival. Make photocopies of recent garden columns and of columns written 10, 25, 50, or even 100 years ago. Make a display of these for your harvest festival or for the fair.

From Garden to Gullet

If you plan on having a harvest festival or a special dinner celebration at the end of your heritage gardening project, the following activities are some suggestions for the big day. You can do these individually or as a group.

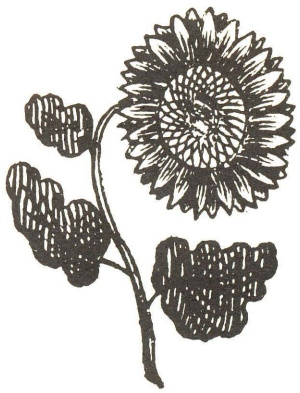
Activities

1. Roast some pumpkin and sunflower seeds:

Sunflower Seeds

Pick the seeds from the mature sunflower heads. Dry them in the sun for a few days, or spread them out on cookie sheets in a sunny window. Sprinkle some vegetable cooking oil lightly on the seeds. Lightly salt the seeds. Bake them in a slow oven (300°F) until dry, then split the shells open to remove the "meat." Salt to taste. You may remove the shells before roasting; do whichever you find easier.

To cure a wart: rub your warts with a kernel of corn, and then feed the kernel to a black chicken.



It is bad luck to keep a pumpkin in your bedroom overnight.

Pumpkin Seeds

Save the seeds from your Halloween pumpkin. Wash the seeds to remove the pulp. Soak the seeds in salted water overnight (2 teaspoons salt to each cup water). Drain and pat dry. Spread the seeds on a cookie sheet and add 2 tablespoons vegetable oil for every 2 cups of seeds. Add 1 to 2 teaspoons salt. Bake at 250°F for 1½ hours or until dry. Crack and remove the shells before eating.

2. Make a pumpkin punch bowl. Thoroughly clean out a pumpkin, making sure to remove all the pulpy strings. Paint a jack-o-lantern face on the outside using felt markers. Refrigerate the pumpkin until you are ready to serve. Pour cold cider or other punch into the cold pumpkin. You are ready to serve!

3. Another decoration to use for your festival is the "green-haired potato." Using a big potato, scoop out a hollow in the top and slice off the bottom so that it will stand upright. Line the inside of the hollow with cotton. Stand the potato in a dish of water. Sprinkle cress seed into the hollow. Keep it watered, and within a few days the potato will sprout a head of hair. You can give the potato eyes, ears, and a nose with cloves or anything that will stick into the potato.

4. Make a flower pot salad bar for your festival. You will need large clay flower pots. Line these with clear plastic wrap, letting the edges of the wrap hang over so they can be secured with tape. Fill the flower pots with fresh vegetables (one variety for each pot), salad dressing, croutons, sunflower seeds, dips, chips, and crackers.

Make a wish while eating a new potato and it will come true.

5. Pioneers often carried parched corn in their pockets to munch on while traveling. They learned this from the Indians. You can make parched corn for your festival. Take two ears of dried corn —this is corn dried right on the cob. Remove the kernels from the cob and place them in a hot iron skillet with 1 tablespoon vegetable cooking oil. Stir with a spoon and shake the pan back and forth at the same time. When the corn kernels swell and turn a rich golden brown color they are finished. Don't let them burn. Serve hot or cold. These make great snacks. If there are any kernels left, store them in an airtight container.

6. Read the following folk tale about Stone Soup.

Three soldiers were passing through a French village on their way home from the wars. The peasants saw them coming and quickly hid all their food. The soldiers went from house to house asking for food. Alas, the villagers had none. The soldiers announced, "Since there is no food we'll have to make stone soup." They filled a huge pot with water. In it each soldier placed a stone. The soldiers said, "Oh, it would be so nice to have some carrots." Some carrots appeared. "A good stone soup needs some cabbage." Some cabbage appeared, and one by one the villagers brought out their stored food. The soup smelled so good and was fit for a king! Soon out came the fiddles, bread, and cider. The people ate and danced far into the night. In the morning the villagers thanked the soliders for all they had taught them. They said, "We'll never go hungry again since we now how to make soup from stones."

You too can make stone soup. Have everyone contribute their vegetables to one huge pot.

More Heritage Gardening Activities

Following are additional heritage gardening activities to use throughout the year.

Animal or Vegetable?

People have been decorating vegetables for years; it's another folk art. The vegetables won't last very long, but you will have enough time to have an exhibit and contest. Judge for the funniest, the cutest, the sweetest, the one that looks the most like someone famous, the most authentic (animal-like), the most original, etc. Use your imagination! Give ribbons to the winners and be sure to take pictures! Here are some starter ideas:

- — A cucumber with radish eyes becomes a caterpillar.
- — A crookneck squash with bean seeds for eyes and a bean beak becomes a bird.
- — A round squash with spinach or lettuce for hair, radishes for eyes, and a string bean for a mouth becomes someone you know.

Bountiful Bean Tepee

A bean tepee is a wonderful hideway on hot summer days. You can sit inside and enjoy the shade. Maybe you can even hear the beans grow! You will need poles that are 8 to 10 feet long and about 1 to 2 inches in diameter. Lash 6 poles together at the top and place them in a 4- to 6-foot circle. Stick each pole in the ground about 4 to 5 inches deep. Spread two of the poles a little apart where the doorway will be. Spread the others equally apart.

Plant five Scarlet Runner bean seeds around the outside of the poles, about every 4 inches except where the doorway is to be located. As these start growing, they may need help growing up the poles; so train the tendrils at the beginning.

Use string to make a mesh on three sides of the tepee. Leave an opening for the door. Now watch them grow. They may need a little extra water if the summer is dry.

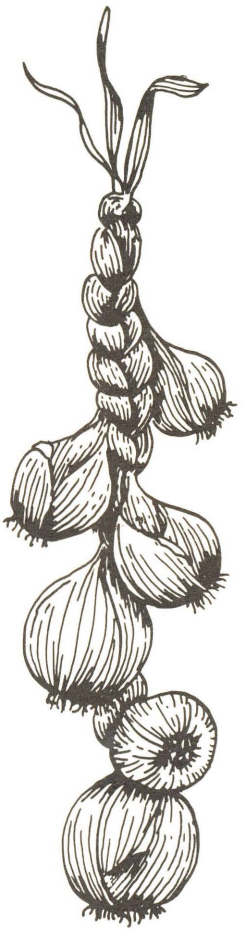
Ask your neighbors or family members if they ever made a bean tepee. See if they have any old photographs of tepees.

Braiding Onions

An old and attractive way of storing onions is to braid them. You do this just after you harvest the onions while the tops are still pliable. Use twine to strengthen the tops. Braid the twine right in with the tops.

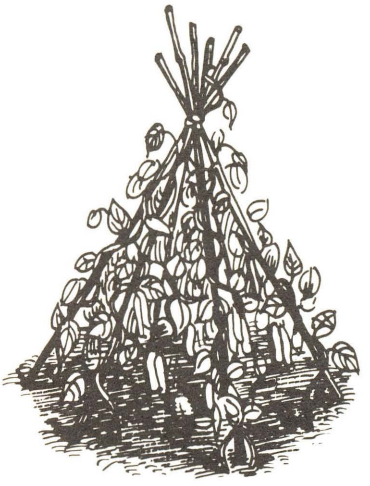
Choose three long-stemmed onions and tie these together at the top. Braid the onions just as you would braid hair. As the tops get shorter, work another onion in so you can keep braiding. At the end, loop the braid around and tie it off with twine.

Let the onions cure in a warm, well-ventilated shady spot. Then store them in a cool, dry, dark place. Bring one braid out at a time to your kitchen. These are pretty to look at and a handy way to store onions.



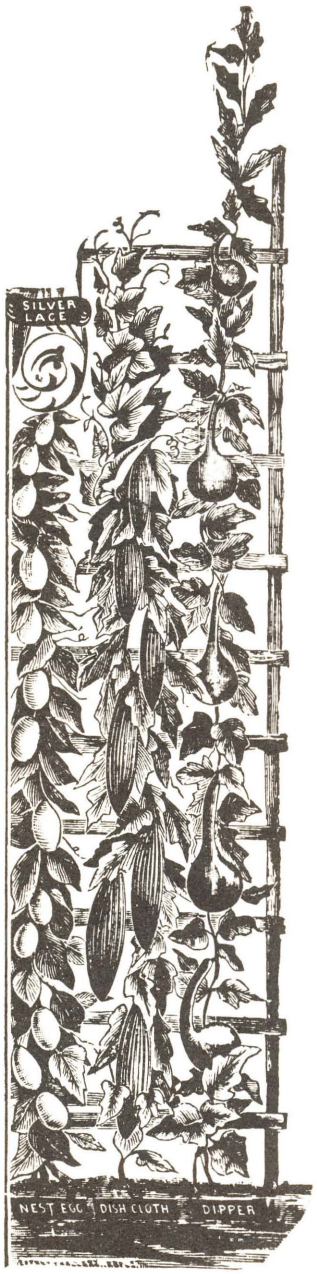
Calligraphy Cress

In early spring lightly scratch your name in prepared soil. Plant the cress seeds. They will germinate quickly, and in a few days you can behold your name in living green! You can harvest the cress in 7 to 10 days or when it's 4 inches high. You can also let it grow and use it as a seasoning.



Cozy Cukes

It's fun to grow a cucumber or summer squash in a bottle. Search for a small cucumber in your garden and stick it in a *small-necked* clear glass bottle. (Bottles may have various shapes.) Be careful not to damage the stem or vine. Keep the bottle shaded at all times or the cuke will "cook" in the sun. Newspapers work well for shading. When the cuke reaches the bottom of the bottle, cut it off. To preserve your cucumber, add a pickling solution to the bottle.



Gorgeous Gourds

Harvest your gourds with the stem still attached and store them in a cool dry place. Let them dry until the seeds rattle. If soft spots appear, throw them out since they are starting to rot. If they look moldy, *don't* throw them out; that is just part of the curing process. You may want to wash them in a borax solution. When the gourd is thoroughly mature, the outer skin mold can be scraped off.

The rich brown color underneath will show through. Now you can soak these in water and scrub with steel wool. Sanding and more rubbing with steel wool will make them even more beautiful. Do not wax, varnish, or seal them in any way. Enjoy the natural colors.

Find out how other people in your community use the gourds they grow. Do they use them for noisemakers, birdhouses, rattles, or decorations? Take pictures of how the gourds are used.

Monogrammed Pumpkins

You can monogram pumpkins or winter squash. When the pumpkin or squash is about the size of a large softball, write your name or initials on the skin with a ballpoint pen. Just lightly break through the skin about 1/8 inch deep. Space the letters about 1 inch apart.

As the pumpkin or squash continues to grow and ripen, the skin will grow back over the wound. The scar of the letters will be raised and rough.

Plant Prints on Fabric

Use pressed plant materials and acrylic paint to perk up a T-shirt, individualize jeans, or create a decorative wall hanging.

Materials Needed:

— **Plants and plant parts pressed flat** (such as vegetable leaves and flowers). These should be collected in advance and pressed flat between layers of nonglossy paper (such as newsprint or old phone books).

— **Acrylic paint** in tubes. These are available at stores having craft and art supplies. This paint is water soluble until dried. Printed items can be washed and dried as usual.

— **Paint brush assortment**—½-inch or 1-inch for leaves; soft watercolor type for delicate flowers.

— **Newspapers, container** to mix paint (oleo tubs), **paper towels, water,** and **sink** (or basin) for washing brushes.

Procedure:

1. Spread a layer of newspaper on a clean, dry, flat surface. Have a pad of newspaper under the item to be painted. With T-shirts, insert a layer of paper so the paint won't bleed through.
2. Arrange plants in a pattern pleasing to you, and plan the order background to foreground. It is always possible to make changes but it will be easier if you have a scheme or theme in mind.
3. Use paint colors as they are from the tube or mix several to get the shade desired. Usually it is necessary to add a few drops of water to the tube paint. You can start with a color and then change it slightly by mixing it with another color. This provides a subtle variation and is an economic use of paint.

4. Using a clean sheet of newspaper, place the plant with side to be printed up. Brush on paint in the direction plant grows—from stem to tip and from stem to outside edge.
5. Place the painted plant material on the fabric with the painted side down. Cover this with a layer of newspaper. Press with your hands, making sure that the entire painted surface has been pushed onto the fabric. Remove the newspaper carefully from the bottom and discard. Remove the plant material and set it aside to dry as it can be used again.
6. Continue this process. Wait between each printing for the previous paint to dry.
7. Flowers are done in two steps. First position the stem in the design. When the stem is dry, add the flower, which is usually a different color.
8. Highlights, fruits, etc., can be added later.
9. If you wish, you can paint your 4-H club name across the top.

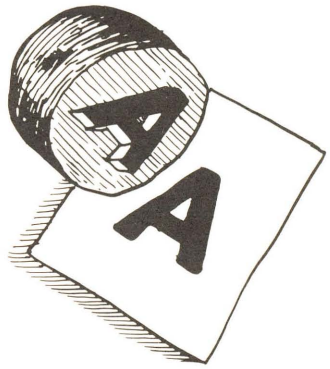
NOTE: It is important to keep your fingers clean at all times. Brushes should be carefully washed quickly before the paint dries. Keep in mind that the paint dries very fast.

Potato and Onion Prints

If you are sending out invitations for your harvest festival, you might want to fancy them up a bit. North American Indians used this simple printing technique to stamp designs on their splint baskets. If you cut an onion in half crosswise, you will see the circle of leaves inside. Make prints with these onion halves by dipping the cut half in ink (a stamp pad works fine) or watercolor paint. Press the onion several times onto a piece of paper and you will have a beautiful print.

By cutting a potato in half you can make letters or designs. Draw the design on the potato half with a pencil. Then use a knife to cut away the portion around the letter. Your letter will then be raised. Use this as a stamp.

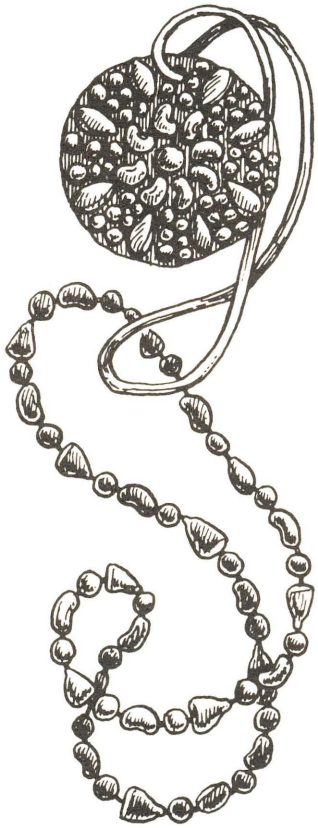
It's fun to make wrapping paper for Christmas with your vegetable prints. Use several colors on plain white or brown craft paper.



Pumpkin People

Using corn stalks, dry weeds, leaves, and bundles of wheat, make legs, arms and a body. Use a pumpkin for a head. If you use cut-out paper eyes, nose, and mouth, it will last longer. Or you can mark these on with paint or felt pens. Cut out a hole in the bottom of the pumpkin. Place a stick or broom handle in this hole. Put the long end of the stick down through the bundle of cornstalks (or other material) that make up the body. Now tie tightly.

You may want to "dress" your pumpkin person or just leave it bare. Have a pumpkin person contest. Be sure to take pictures.



Seed Medallions

These attractive medallions made of seeds are beautiful to wear. Smaller versions can be used for Christmas tree ornaments.

Some attractive seeds to use include:
—corn (yellow and ornamental varieties)
—popcorn
—sunflower seeds
—split green peas
—kidney beans
—navy beans

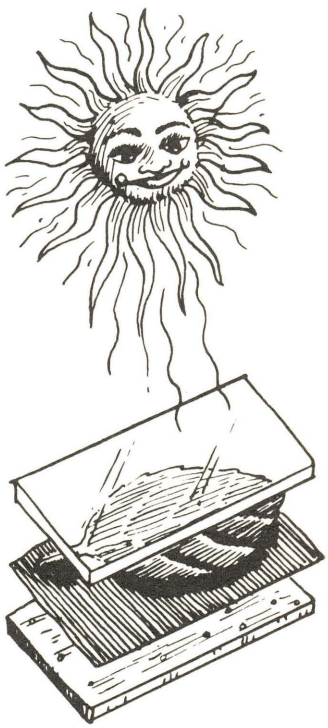
Start with a plain thin cardboard circle and lay the seeds of different colors in a pleasing pattern. Make a sketch of this pattern on paper.

Punch a hole at the top of the cardboard. Put a heavy coating of white glue on the surface and arrange the seeds on the glue. Different sections of the design may be outlined with colored string if desired. After the medallion is completely dry, spray it with a crystal clear glaze.

Make a 36-inch loop of yarn, leather thong, or shoelace. Run the loop through the hole for wearing around your neck.

For Christmas tree decorations, make 1½-inch circles. Make a 4-inch loop for hanging them on the tree.

These can be made in many shapes. Use your imagination!



Seed Necklaces

Bean and pumpkin seeds and corn kernels can be combined to make beautiful necklaces. Soak them in cold water overnight. Drain them on a towel. Thread a large-eyed needle with strong thread or dental floss. You will need a strand 24 to 30 inches long. (It should be long enough to put your head through.) While the seeds and kernels are still soft, push the needle through them, one at a time. Take both ends of the thread, pull them tightly together, and tie.

Sun Prints

This activity is quick and lots of fun. Leaves of vegetables will yield a finely-detailed print that is good enough for a plant identification contest.

Materials:

— **Blueprint paper** (cut into 8½-inch by 11-inch pieces) available from architects or drafting supply houses. Do not expose to light. Or you can purchase sunprint paper from a craft supply store.
— **Heavy cardboard** (cut into 12-inch-square pieces)
— **Clothespins** (snap-type)
— **Sunlight**
— **Leaves, flowers, and seeds** from your garden
— **Plexiglas** (cut into 12-inch-square pieces). This is available from hardware stores.

Directions:

1. Gather the materials from your garden; flat items will make more detailed prints.
2. Place blueprint paper on top of a piece of cardboard. Have the white side down and the blue side up.
3. Arrange your garden items on top of the blueprint paper (the blue side).
4. On top of the arrangement, lay a piece of Plexiglas. Use clothespins to fasten the four layers together around the edges.
5. Expose the top arrangement (blue side of paper) to the sunlight. Expose until the visible paper has lost most of its color.
6. Separate the layers and rinse the blueprint paper in water to "fix" the print.
7. Dry the prints in a flat position.

References

The following books are helpful for both leaders and members. Included are books on growing and cooking vegetables. You should be able to find many of these at your local library or bookstore.

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Walker, Barbara M. *The Little House Cookbook; Frontier Foods from Laura Ingalls Wilder's Classic Stories.* New York: Harper & Row, 1979. (Section on "Foods from Gardens and Orchards" is excellent; includes many heirloom varieties)

Wilder, Laura Ingalls. *Little House in the Big Woods, Farmer Boy, Little House on the Prairie, On the Banks of Plum Creek, By the Shores of Silver Lake, The Long Winter, Little Town on the Prairie, These Happy Golden Years.* New York: Harper & Row, 1932-1943. (The collection of "Little House" books makes excellent background reading)

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