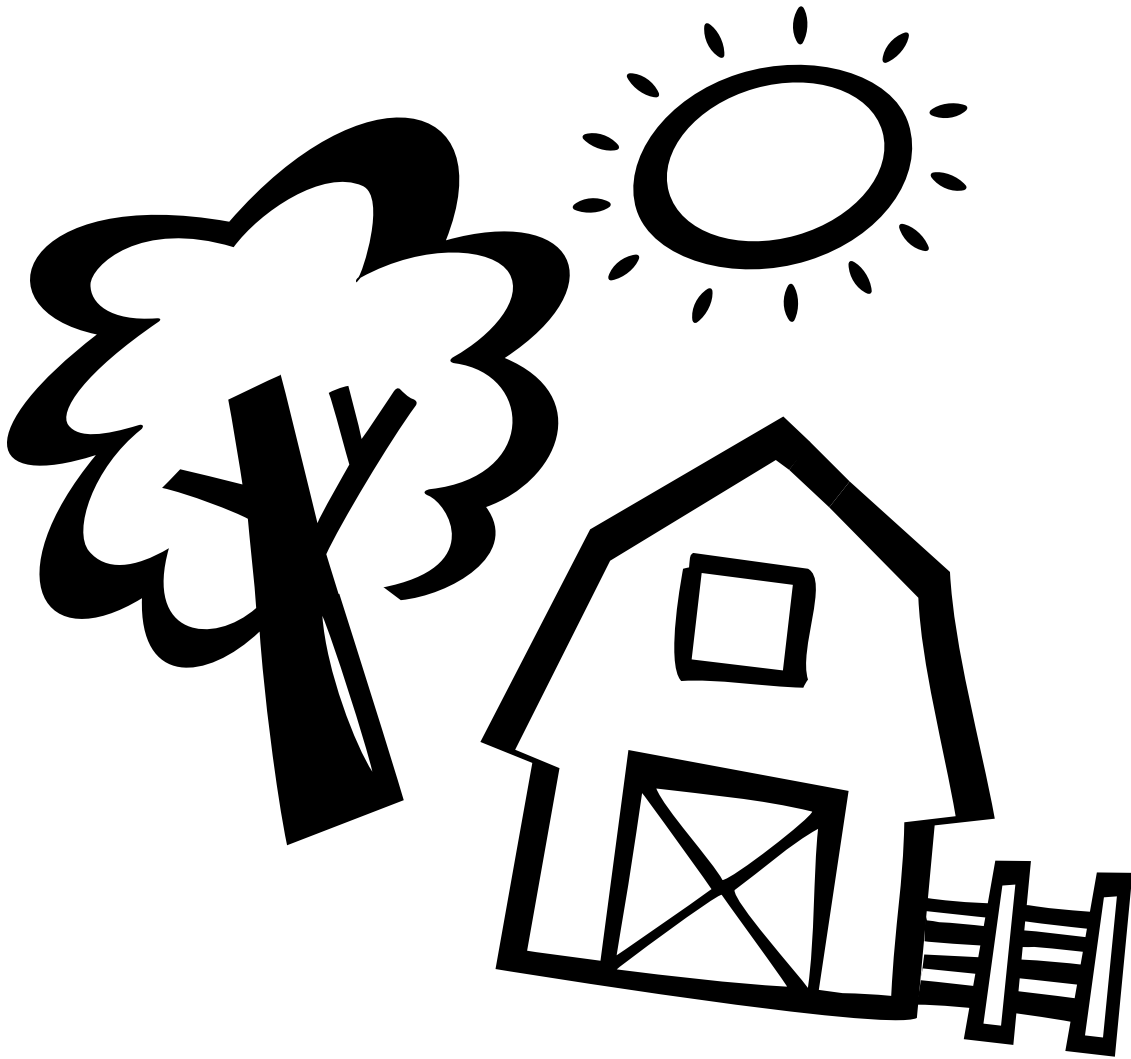


Minnesota Agriculture in the Classroom

K-3 Ag-tivity Book



www.mda.state.us/maitc



AG-TIVITIES GRADES K-3

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= Adult Helper Activity

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ABOUT THIS BOOK

This book includes a handy collection of ready-to-use activity sheets that integrate agriculture into basic school subject areas. The activities are ideal for use in classrooms, community organizations or anywhere young people could benefit from learning more about agriculture.

Check out the collection of fast-paced “Five-Minute Ideas” when there are only a few minutes to spare. “For More Fun and Learning” activities offer more extended learning experiences in agriculture.

Why Agricultural Awareness Education for Young People?

- In times past, people were very aware of the role agriculture played in their lives. It meant survival! Nearly everyone —men, women and children — worked the land.
- Only about two out of one hundred Americans work in production agriculture (farming). This small group meets the food and fiber needs of the entire nation as well as many people abroad.
- Agriculture still means survival! That will never change. But as time goes on, fewer and fewer people have close contact with farming. They're not aware of their own — and the nation's — total dependence on agriculture. And for many people, farms and farming are their main or only view of agriculture. They're simply not aware of the vast range and impact of the agricultural system or society's dependence upon it.

Agriculture (with its related occupations) is the nation's — and the world's — largest industry. It generates billions of dollars each year and one out of every six American jobs depends on it in some way. Agriculture has a huge impact on the American economy and on the prices Americans pay for their basic needs — food, clothing and shelter. Agriculture influences the country's international balance of trade and directly affects the number — as well as kinds — of jobs throughout the world.

Fewer students today pursue agricultural careers. Along with a limited knowledge of agriculture itself, there seems to be a widespread and false belief that agricultural careers are largely production farming and low-income jobs. In reality, there are growing demands and excellent career opportunities for well-educated, qualified people in many of the thousands of occupations associated with agriculture. Agriculture needs good people.

Agriculture is at the heart of global dependence and interdependence. For developed countries, agriculture is at the core of international trade and economics. For less-developed countries, agriculture often means the difference between life and death. World population is now approximately 7 billion (Dec 2011). If the current growth rate continues, the number of humans on the planet will be 9 billion by 2050. Most of these people will live in less-developed, lower-income countries with limited natural resources. Most of the population will live in cities. Urban dwellers are consumers — rather than producers — of food, energy and materials.

Agriculture will continue to face huge challenges to meet the needs of a growing world population. And tomorrow's citizens must be agriculturally literate in order to make responsible and moral decisions — personally & collectively — about this giant global lifeline. Building that literacy & awareness in future leaders is the goal of agricultural awareness education.

There is a vast ability difference between kindergarteners and third graders. Kindergarteners and non-reading children will enjoy the activities as much as the older youngsters will, but they will need the help of a reader. Second and third graders will be able to do most of the activities independently.

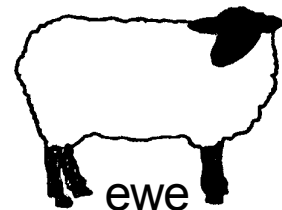
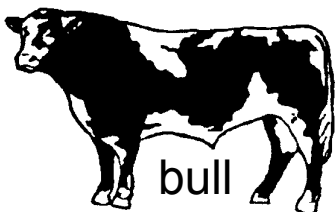
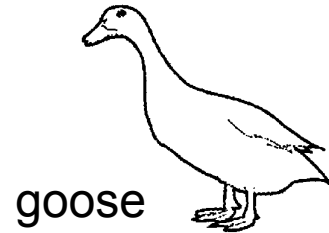
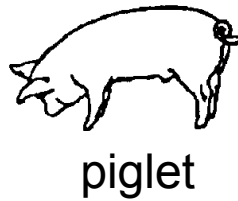
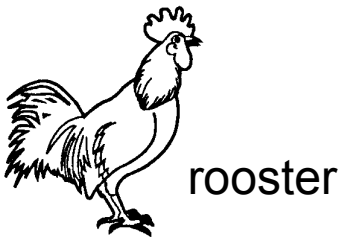
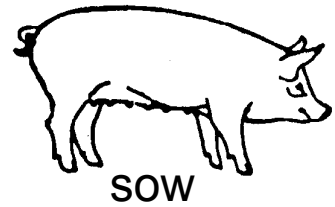
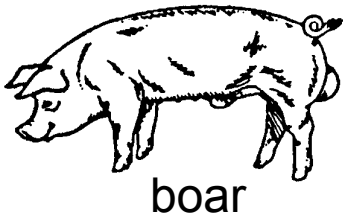
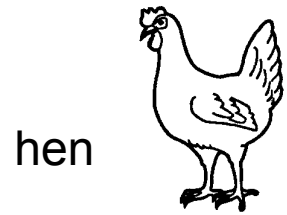
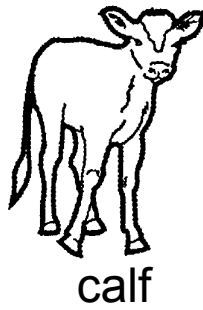
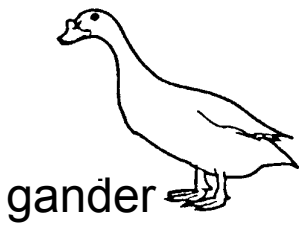
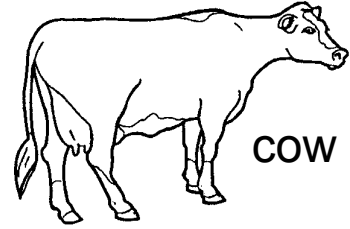
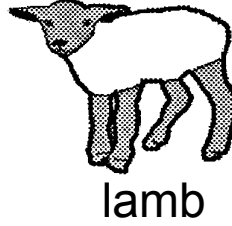
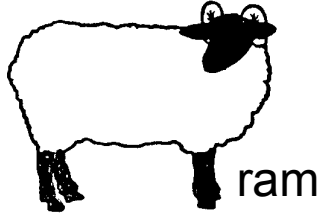
Comments, questions and feedback about agricultural awareness education for youth are always welcome. Contact Al Withers, Program Director, Minnesota Agriculture in the Classroom, 625 Robert St. N., St. Paul, MN 55155; 651-201-6688; alan.withers@state.mn.us

ENJOY!

Name _____

WHO'S WHO?

Draw lines to match the fathers, babies and mothers.



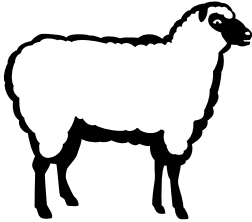
How many have 2 feet? _____

How many have 4 feet? _____

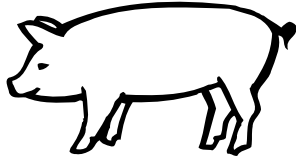
Name _____

CLUE IN

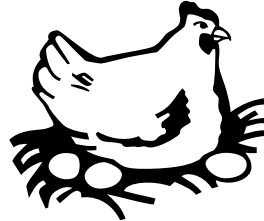
Write each animal's name by its clue.



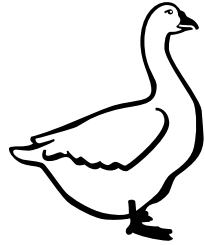
lamb



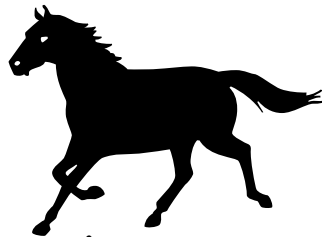
pig



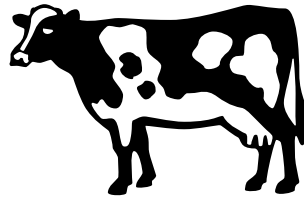
chicken



goose



horse



cow

Clues:

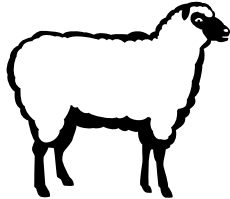
1. I have a curly tail. I'm one of the smartest animals on the farm. _____
2. My coat can be shorn (shaved) to make wool. Like your hair, it always grows back.

3. My feet help me scratch the ground for food. _____
4. I have no top teeth. I pull grass in with my lower teeth and swallow it whole. I give milk. _____
5. Just like your fingernails, my hooves never stop growing. Sometimes I wear shoes to protect them. _____
6. My feathers are used to make things soft and warm. They fill pillows, sleeping bags, comforters and vests. _____

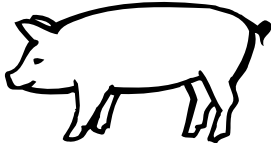
Name _____

WHERE DOES MEAT COME FROM?

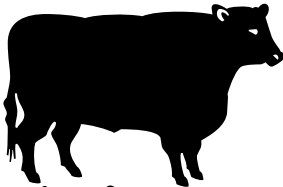
Draw lines to match the animal with the meat.



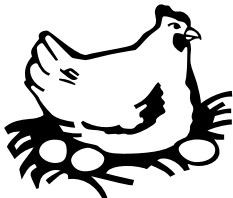
lamb



pig



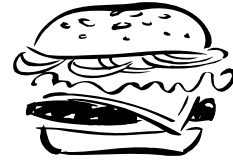
beef cow



chicken



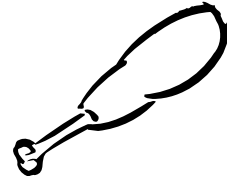
fish



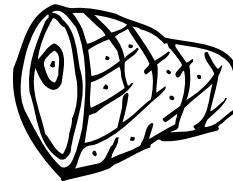
hamburger



lamb chop



drumstick

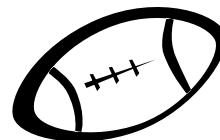


ham



fish fillet

Other things come from animals, too. Here's one:

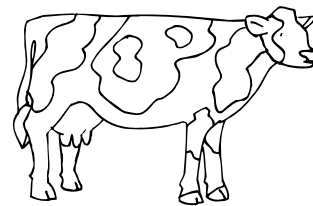
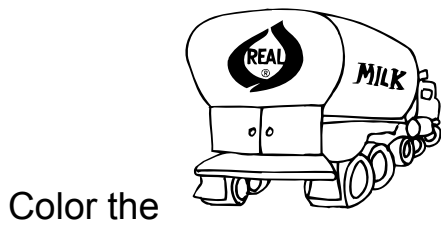
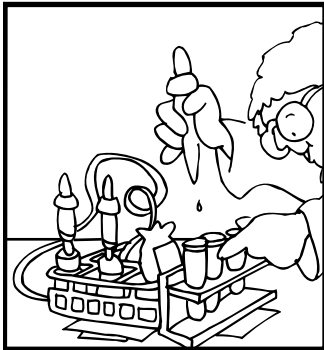
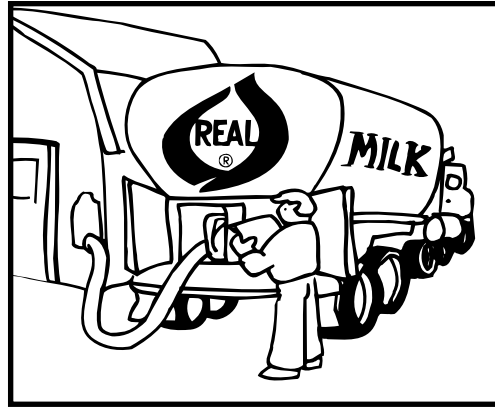
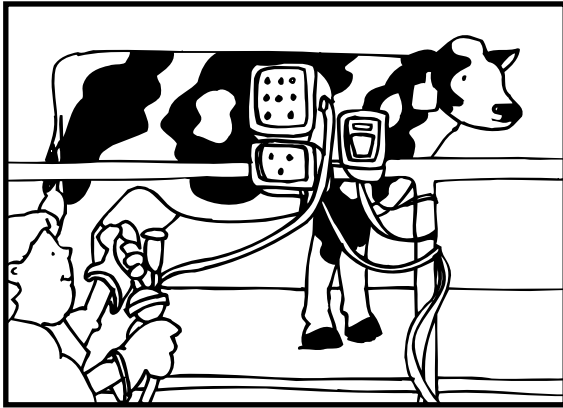


Which animal does it come from? _____

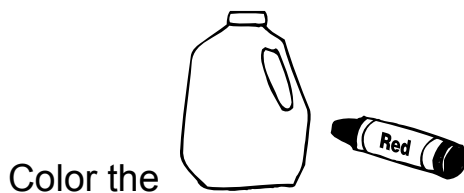
Name _____

FROM MOO TO YOU

Look at the pictures. Tell the story of milk from cow to you.



's spots

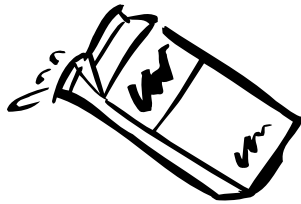


Name _____

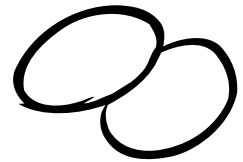
FOODS WE EAT

Make an X on the food in each group that does not belong. Color all the right ones.

Dairy foods



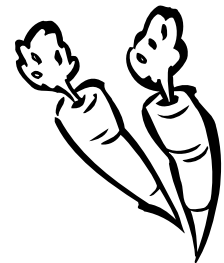
Protein Foods



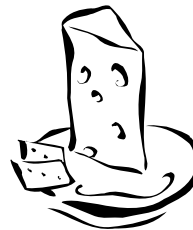
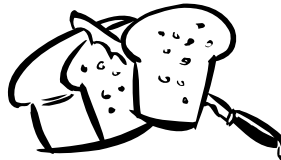
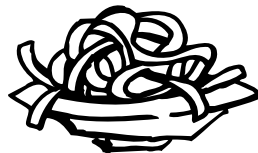
Fruit



Vegetables



Grains



Name _____



PRETTY SEEDY!

1. Get these foods with seeds in them:



apple



grapes



grapefruit



peach or plum

2. Guess how many seeds in each. Write your answer on the lines above.
3. Have an adult cut open the fruit.
4. Count the seeds you find in each.
5. Graph your counts.

Number of Seeds in Fruit

OF SEEDS

10+
9
8
7
6
5
4
3
2
1
0



How many seeds in all?

Eat the cut-up fruit!

Fruits have seeds inside.

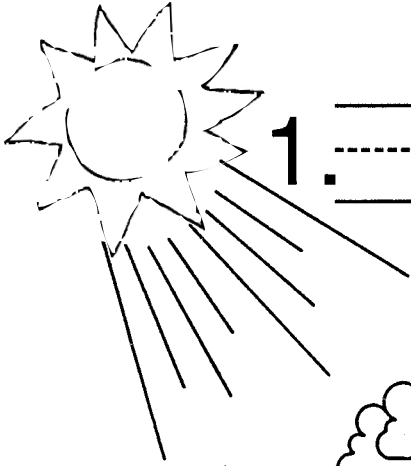
What are seeds for? _____

What are some seeds we eat? _____

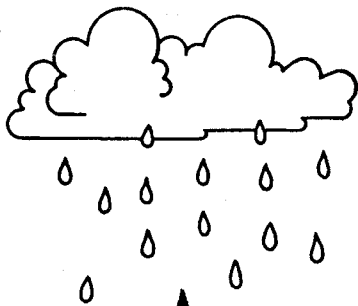
Name _____

GET GROWING!

What natural resources does a plant need to grow? Write the four words and you'll see! Color the pictures.



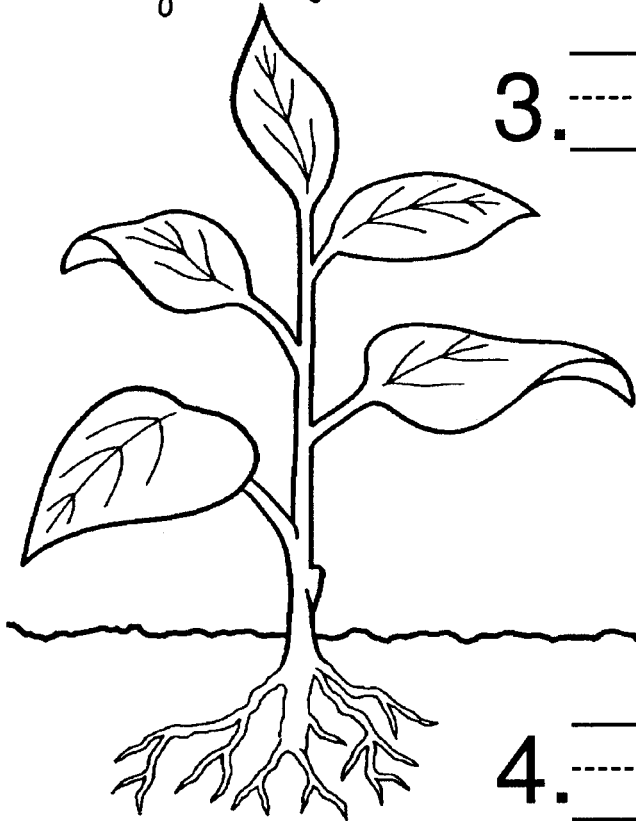
1. _____



2. _____

(You can't see this one.)

3. _____



Word Box
sunlight
air
water
soil

4. _____

Draw a star by each natural resource YOU need, too.

Name _____

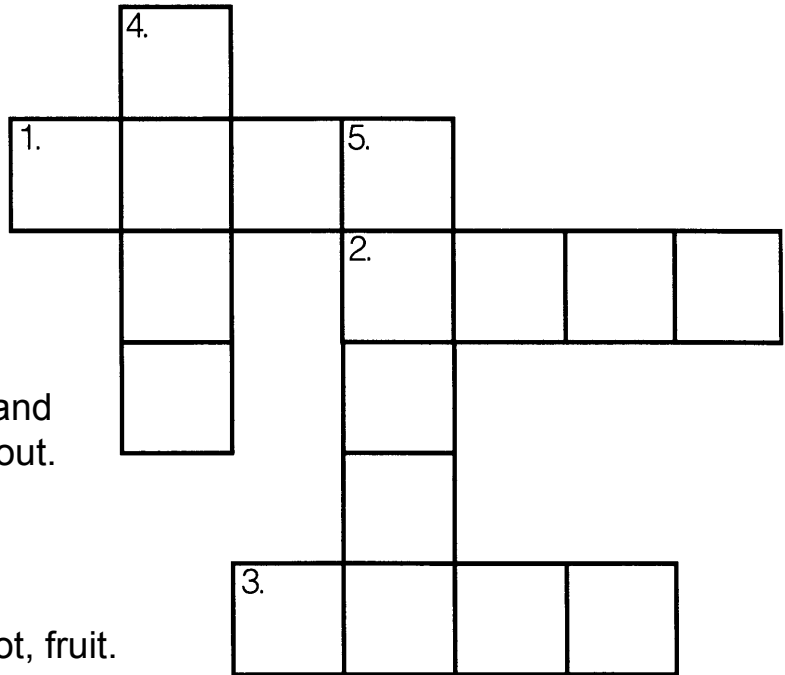
WAY TO GROW!

Across

1. I make food for the plant.
2. I take in food and water from the soil.
3. I hold the plant up.

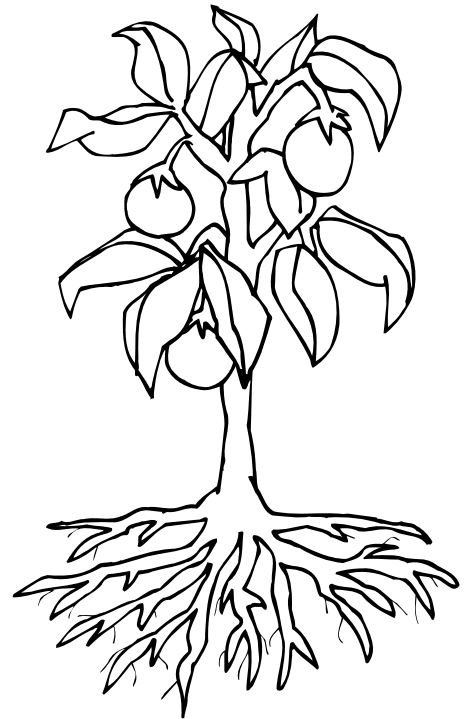
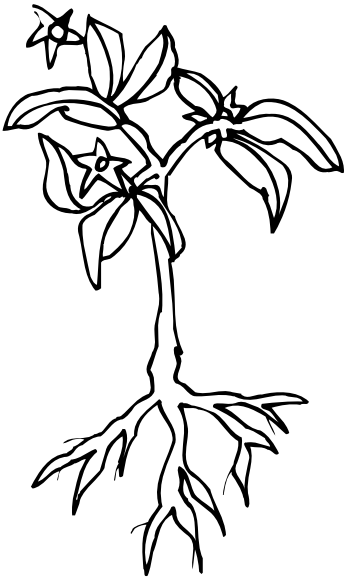
Down

4. Inside me is a baby plant and all the food it needs to sprout.
5. I have seeds inside.



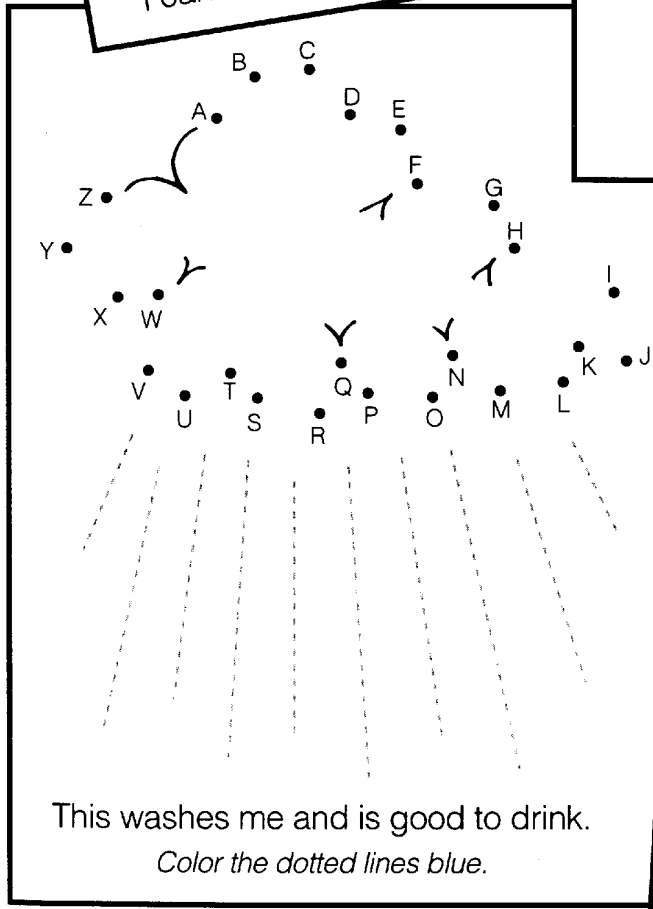
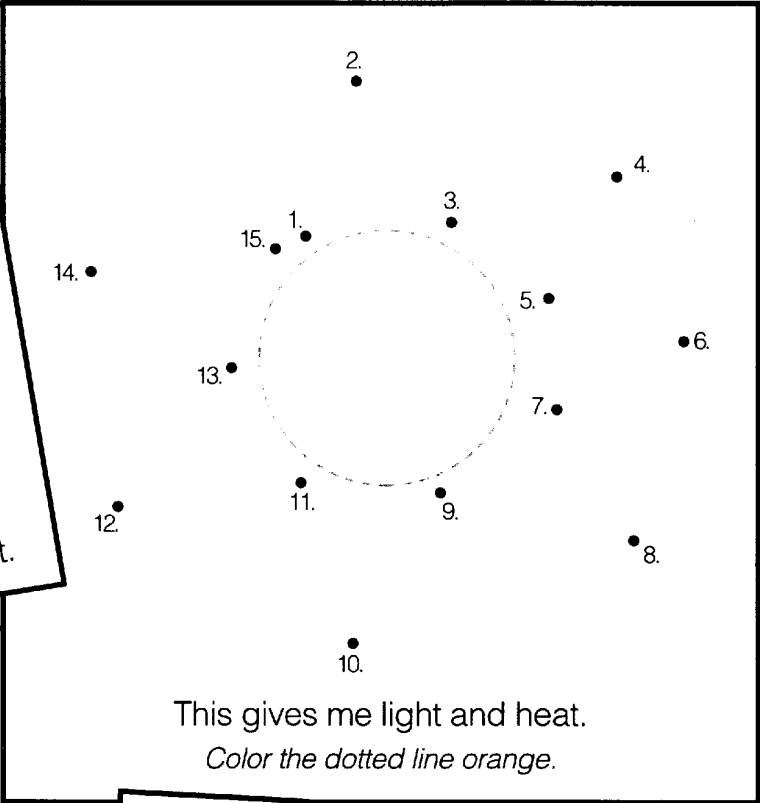
Word Bank: stem, seed, leaf, root, fruit.

Label the pictures of a growing plant. Write a 1 in the blank under the picture that happens first. Write a 2 for the picture that happens second, a 3 for third, and a 4 for the picture that happens last.



EARTH'S GIFTS

These are Earth's natural resources. Need more clues? See page 9!



Name _____

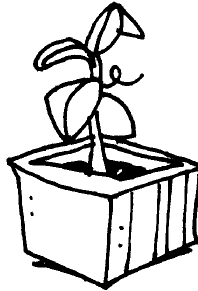
GROW A GARDEN



Check (✓) how your garden will grow.



In a pot

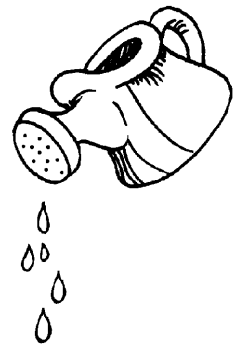
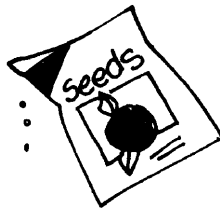
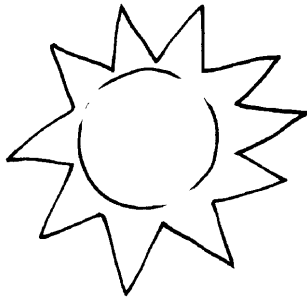


In a box



In a garden

You will need:


















What do you want to grow? Draw it here.

Ask an adult to help you plant real plants. Even one plant is fun to grow!

Name _____

PLANTS ARE FOOD

Make an X on the food in each row that does not belong.

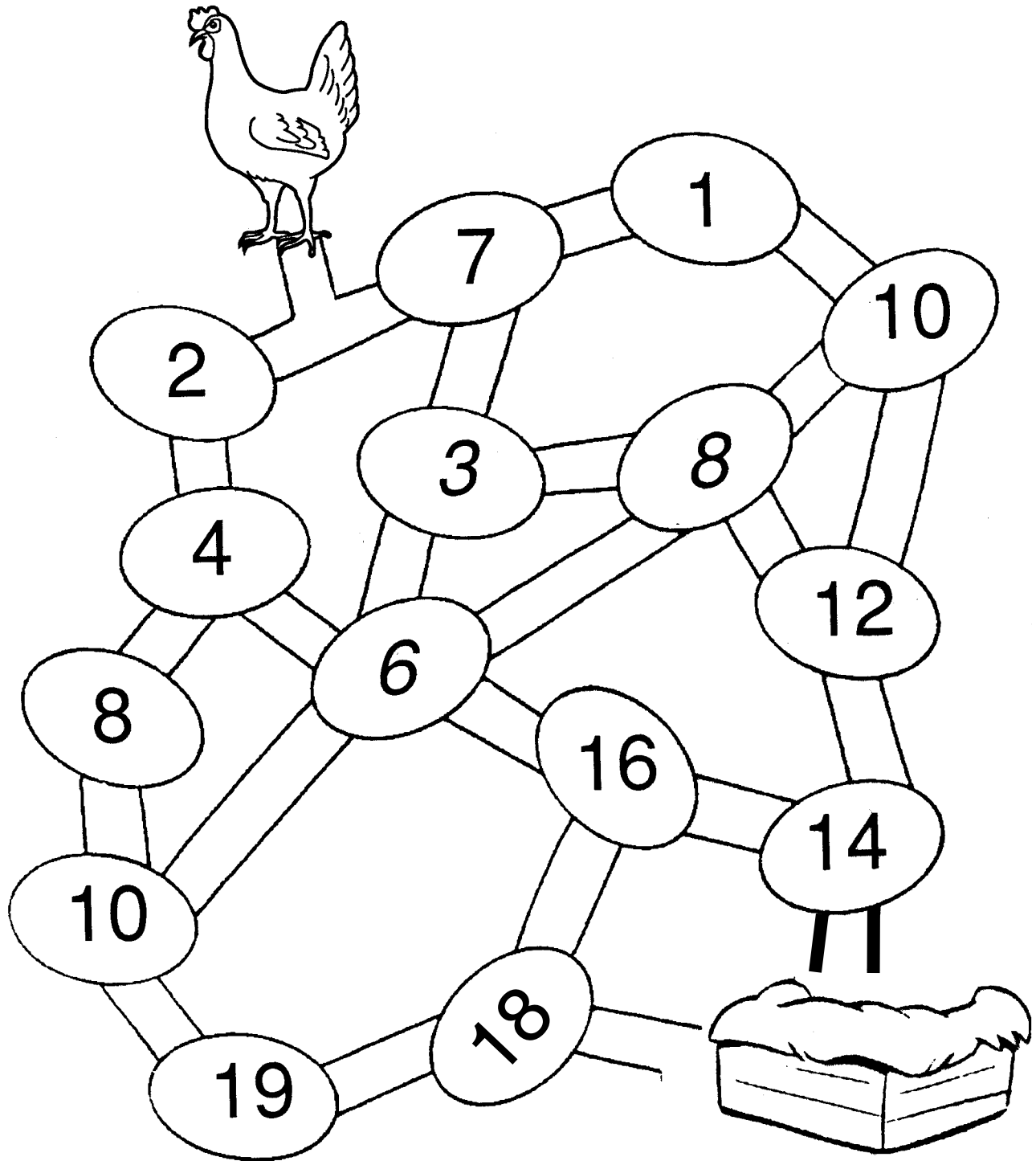
We eat flowers.	 onion	 broccoli	 cauliflower
We eat leaves.	 lettuce	 cherries	 herbs
We eat roots.	 radish	 carrot	 lettuce
We eat stems.	 tomato	 celery	 asparagus
We eat seeds.	 peas	 corn	 watermelon

Draw your favorite plant food here.

Name _____

EGG MAZE

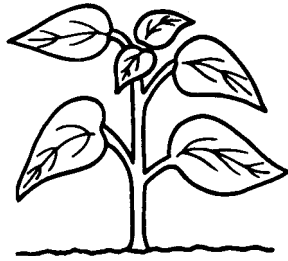
Help the hen get to her nest by finding the path that counts by twos. Color in the path to connect the numbers.



Name _____

AG A-B-C's

Put each group of five words in alphabetical order on the lines next to each group.



Crops

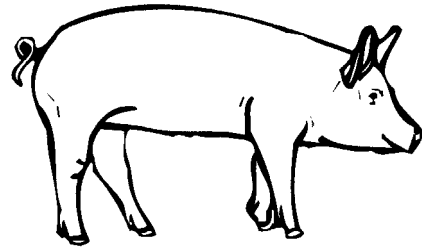
soybeans _____

wheat _____

corn _____

cotton _____

rice _____



Livestock

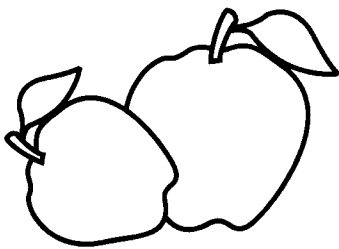
sheep _____

swine _____

poultry _____

beef cattle _____

dairy cattle _____



Horticulture

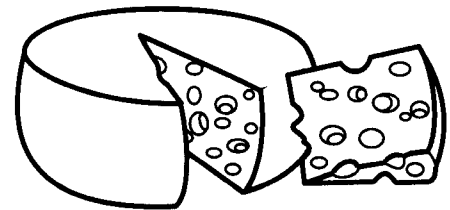
flowers _____

sod _____

apples _____

vegetables _____

trees _____



Dairy

yogurt _____

cheese _____

ice cream _____

butter _____

sour cream _____

CRACK THE CODE

Use this code to answer the riddles.

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

1. Why can't a pony sing?

,

5 20 10 16 25 10 20 9

15 5 20 20 15 4 23 24 7 10 4

2. What is a baby pig after it is four days old?

14 5 2 4 17 9 13 10 24 15 17

3. Why does a sheep go over a hill?

,

10 23 4 8 9 21 20 12 24

25 21 17 4 7 9 23 5 15 15

4. What time is it when a cow sits on a fence?

20 5 11 4 20 24 12 4 20

9 21 4 19 14 4 21 8 4

AG-RELATED WORDS

agriculture	rooster	sausage	Guernsey
farm	chick	pork chops	Jersey
farmer	cow	steak	breed
rancher	calf	ribs	timber
silo	bull	eggs	lumber
barn	steer	baler	log
crib	heifer	combine	sawmill
corn	horse	tractor	forest
hay	colt	hay wagon	trees
clover	filly	plow	sawdust
silage	mare	sprayer	wood
oats	stallion	computer	windbreak
wheat	goat	fork	logger
soybean	billy	shovel	forester
pea	nanny	elevator	clay
sunflower	kid	grasshoppers	topsoil
feeds	sheep	pests	silt
bales	buck	weeds	erosion
bushel	ewe	insects	water
kernel	lamb	cud	irrigate
crop	ram	udder	plant
straw	rabbit	livestock	environment
field	doe	pasture	wetland
herd	buck	graze	drought
flock	kit	corral	harvest
coop	kindle	acre	lumber truck
poultry	pig	bee	milk truck
hatcheries	piglet	queen bee	cattle truck
turkey	sow	drone	saddle
hen	boar	hive	bridle
tom	swine	honey	halter
chicken	litter	beeswax	bareback
goose	veal	swarm	agribusiness
gander	beef	pollinate	grocery store
gosling	pork	Hereford	feed store
duck	ham	Angus	farmers' market
duckling	bacon	Holstein	garden

IDEA STARTERS

Integrating agriculture into your classroom or community with youth activities is easy and fun. Try the “Five Minute Ideas” when you have only a few minutes. Choose from “Extended Learning” when you have more time. Special thanks to Agriculture in Montana Schools for many of these suggestions.

--- Language Arts ---

Five-Minute Ideas

1. Play twenty questions using agricultural items to guess.
2. Play “Going to California” with an agricultural theme. “If I were going to California, I’d take apples, bulls, calves, dogs, eggs, fences, goats, etc.” Each person repeats what the previous player has said and adds an item starting with the next letter of the alphabet.
3. Choose words from the Ag-Related Words list and have a quick spelling bee or alphabetizing exercise.
4. Play spelling tag. Start with the word agriculture (written on the board). Go around the room and have each student tag a word to the end of the previous word. All words have to do with agriculture; one word starts with the same letter that ended the previous word. Example: agriculture, egg, goat, turkeys, sheep, plow, wheat, etc.
5. Taking turns, go around the room and have each student finish the sentence: “If I were a farmer, I’d raise...” Each person tries to name a different crop or livestock.
6. Divide into teams. Set a four-minute time limit and challenge each team to list on chart paper all the things they can think of that come from the forest. Compare lists. What things listed were surprises to many in the group?
7. Choose words from the Ag-Related Words list and have youngsters classify by headings. For example: machines, animals, crops, etc.

Extended Learning

1. Read “Thanksgiving Feast, 1621” by Aileen Fisher (poem). Discuss and compare the menu at the first Thanksgiving to one served today. Discuss the differences in getting and preparing the food.
2. Create original class-composed big books and individual books featuring favorite farm animal riddles.
3. Do a class scrapbook - “Things We Don’t Know (or Wonder) About Agriculture.” Then, throughout the year, research the missing information and have students fill in the book. Encourage them to add illustrations, too.
4. Creative Stories:
 - a. Write about the difficulties and hilarities youngsters would have raising a farm animal in the city.
 - b. Have students imagine being a farm product being sent to another country. What adventures would they have along the way?
 - c. Write about the cow that gave chocolate milk; the chicken that laid square eggs; the tree that grew apples on one side, sauerkraut on the other; the sheep that grew neon wool.

5. Make cards of some of the words on the Ag-Related Words list. Give students a time limit and have them alphabetize, classify by headings (animals, tools, grains) or types of words (long a, three syllables, compound words, etc.)
6. Give students old magazines and have them cut out pictures to staple on a bulletin board for a collage of things that start with agriculture. Examples: food, housing, clothes, etc.
7. Cut hand holes on the sides of a small covered box. In it, place some wool fleece, cotton washcloth, linen towel, corduroy, cardboard square, wool yarn, burlap material, a short section of hemp rope or other examples of fiber fabric. Students put their hands in the box, identify objects and write them down. They then name and tell the agricultural product each was made from.

--- Social Studies ---

Five-Minute Ideas

1. Have students look around the classroom to find things that came from farm and forest products. Examples: glue, paper, pencils, clothing, chalkboard erasers, books, rubber items, wood items, window shade cord, drapes, flags, etc. What would life be like without these things? What kinds of jobs are made possible by each of these things?
2. Challenge students to name businesses in your community that are connected to agriculture or depend on agriculture.
3. Show pictures of food or food ads from magazines. Discuss how advertising influences people to want things.
4. Set up a Farm Corner in the classroom and invite students to bring in things relating to agriculture. Have a short discussion about new objects as they appear.
5. As a group, brainstorm the kinds of crops and livestock students have seen in Minnesota. How many have eaten or used each food?

Extended Learning

1. Give students old magazines and have them cut out pictures to staple on a bulletin board for a collage of occupations related to or dependent upon agriculture.
2. When studying a particular agricultural specialty (such as crops, dairy, etc.) have students list related industries, such as truck drivers driving to and from the farms and markets, fertilizer makers, seed growers, scientists researching new plants and animals, artists and marketers designing packaging and how to sell agriculture products, etc.
3. Have students trace food to its "Roots." Examples: milk - cow - grass - soil; cereal - grain - soil; ham - pig - corn and other grains - soil.
4. Make booklets on any aspect of agriculture that interests your group. Examples: farm machinery - past and present; specific farm animals; how a crop gets from the field to our tables in forms we can eat; food that comes from other states or countries; foods their families eat because of family backgrounds.
5. Take a field trip to a farm. Take photos of the trip to share with parents and other classes. If you need ideas of where to go, call Minnesota commodity groups to locate farms that specialize in things you're interested in seeing (corn, beef cattle, sheep, apples, etc.). For more information call, Minnesota Agriculture in the Classroom (651) 201-6688.

6. Create a large map of Minnesota and put it on a bulletin board. Have students draw and place symbols of Minnesota crops or livestock in appropriate growing spaces on the map.
7. As a group, brainstorm the kinds of crops and plants youngsters have seen in Minnesota. How many have eaten or used each food?

--- Science, Environmental Education ---

Five-Minute Ideas

1. Bring a collection of common seeds to the group. How many can they identify in five minutes?
2. Feature a “leaf of the week” for students to learn to identify. Bring in some yourself. Encourage students to do so, too. How are trees part of agriculture?
3. Encourage students to form a “question bowl” of things they wonder about in science or environmental education and agriculture. During spare minutes throughout the week, the group draws a question from the bowl and attempts to answer it, or researches to find the answer.

Extended Learning

1. Get involved in Arbor Day and Arbor Month activities. For planning guides and free resource materials, go to the Minnesota Department of Natural Resources at www.dnr.state.mn.us/arbormonth.
2. During Wildlife Week, have students list ways wildlife depend on the forest for their existence. Next, list and compare how wildlife depends, in part, on farmers. How can children help wildlife?
3. Wash a tractor tire, fill it with dirt and plant beautiful flowers in it. (Alternate tire ideas: make a tire swing; line a tire with pillows for a “Book Nook;” fill with sand for a sandbox.)
4. Plant trees, flowers, vegetables!
5. Discuss irrigation and the importance of water to agriculture. What are at least ten ways the group can help save water?
6. When studying the food chain in science, have students name several different food chains and point out that they all begin with plants. This emphasizes the need for conserving the soil.
7. In discussing death or dying, relate to agriculture and the life cycles of plants and animals. It helps students understand death as a natural occurrence.
8. Count the annual rings on a tree stump to estimate the age of the tree. How can trees be a part of agriculture?

--- Health and Nutrition ---

Five Minute Ideas

1. Have students tell what they ate for a meal and then trace the products back to the farm. Example: pancakes (milk-cow, flour-wheat, egg-chicken, shortening-soybean), syrup (corn or maple trees), butter (cows or soybeans).
2. List several child-favorite foods on the board (pizza, tacos, spaghetti, burgers, hot dogs, etc.) Think about the ingredients of each. Where did they come from? Which are the most nutritious to eat?

Extended Learning

1. Show posters and discuss the My Plate food diagram (www.choosemyplate.gov). How well do students do at getting the recommended number of foods for every meal? Challenge the group to find any food that doesn't come from the farm in some way.
2. Find out how farmers keep their animals clean, healthy, comfortable and well fed. Why is good animal care important to the farmer?
3. Invite a nutritionist to talk with your group about farm products loaded with power-packed nutrition.
4. Organize a Dairy Fair and Tasting Party. Display and sample as many dairy foods as possible.
5. Discuss food safety and government guidelines that keep our foods safe to eat. What food-handling tips do we need to remember to keep food safe? (Wash hands when handling food, keep hot food hot and cold food cold, etc.)

--- Creative Arts ---

Five-Minute Ideas

1. Share the work of an "artist of the week" who has featured agriculture in some way through painting, sculpting, photography, song, literature, etc.

Extended Learning

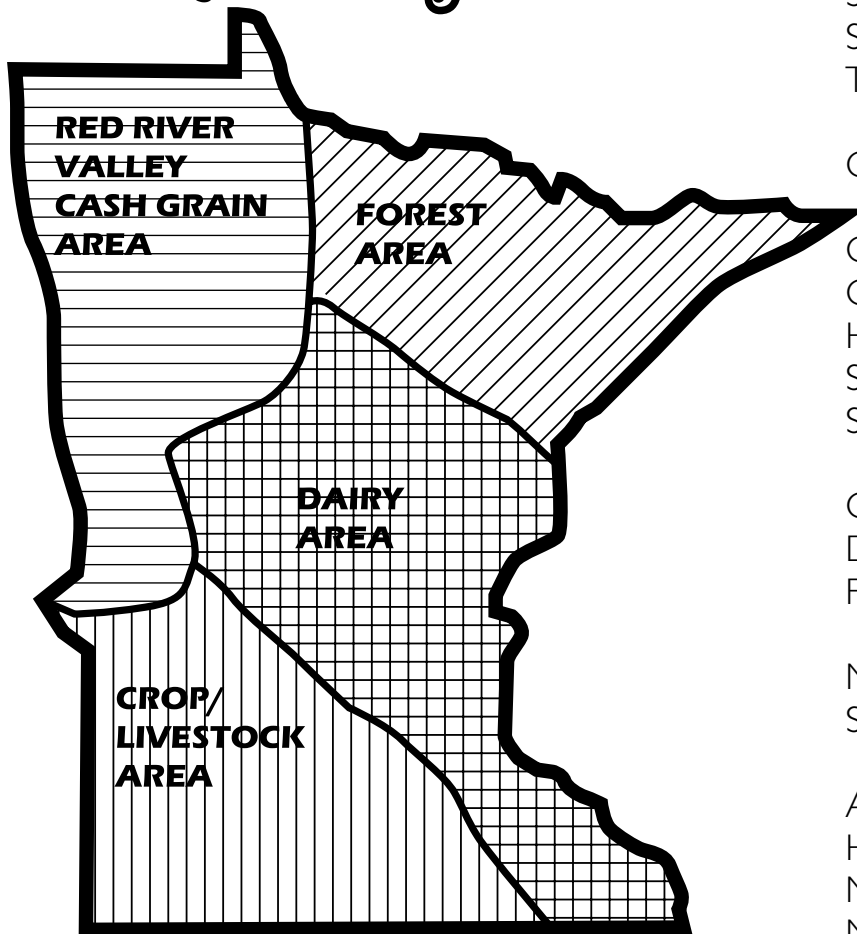
1. Make seed collages. Glue various kinds of agriculture seeds (corn, wheat, bean, oats, sunflower, etc.) on paper to create the scene.
2. Learn agriculture and natural resources songs. Start with America the Beautiful, This Land is Your Land, The Jolly Plowman, Farmer in the Dell, etc. How many songs can your group come up with that are related to agriculture or nature?
3. Write farm animal riddles, poems, short stories.
4. Send students home or out into the community with cameras to photograph things that are or came from agriculture. Label and display the photographs for all to enjoy.
5. Learn basic weaving, using strips of paper or heavy yarn stretched over cardboard.

Agriculture is Everywhere!

When it comes to agriculture, Minnesota can't be beat!

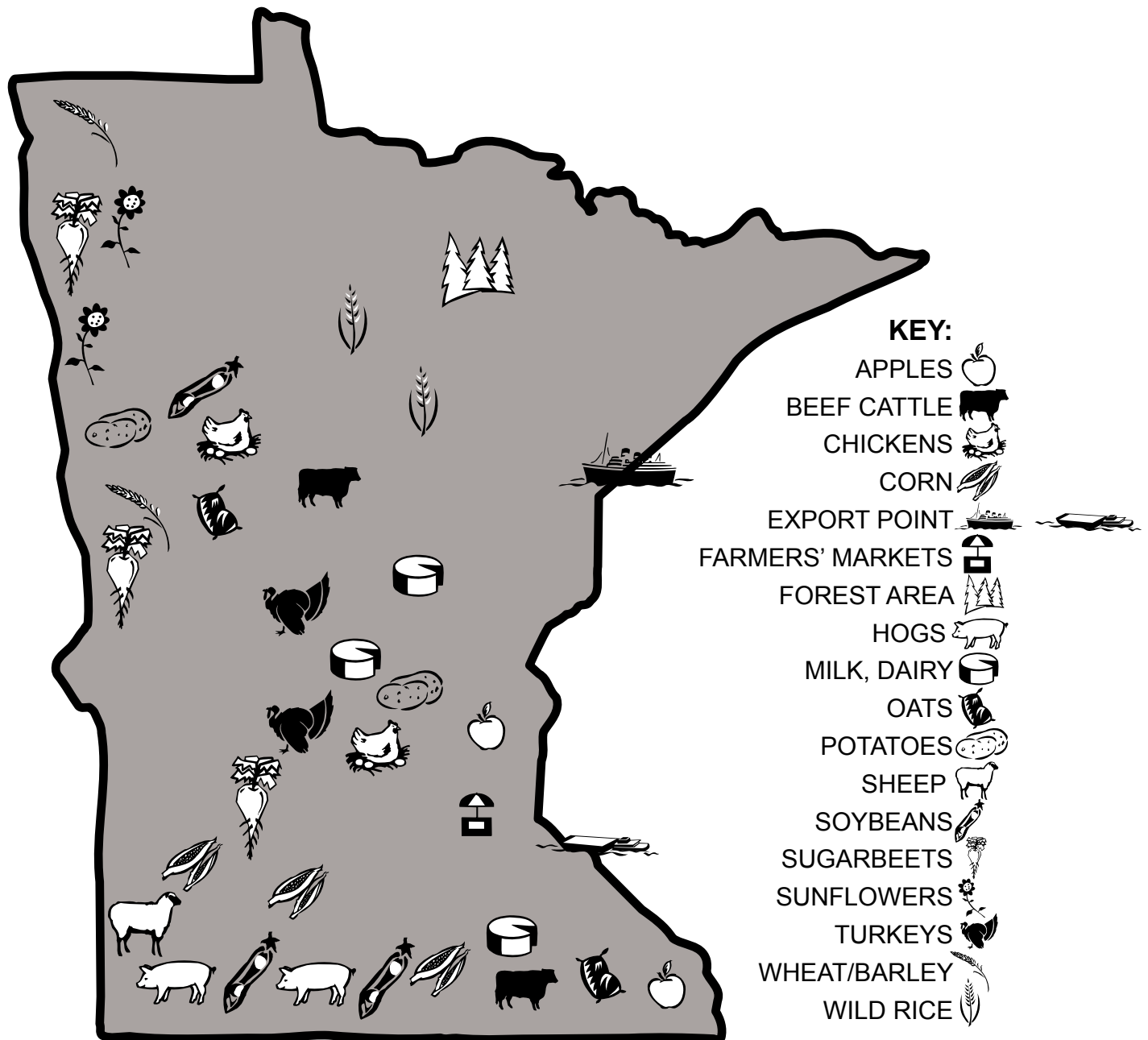
In 2010 we ranked in the top 10 states producing:

Growing Areas



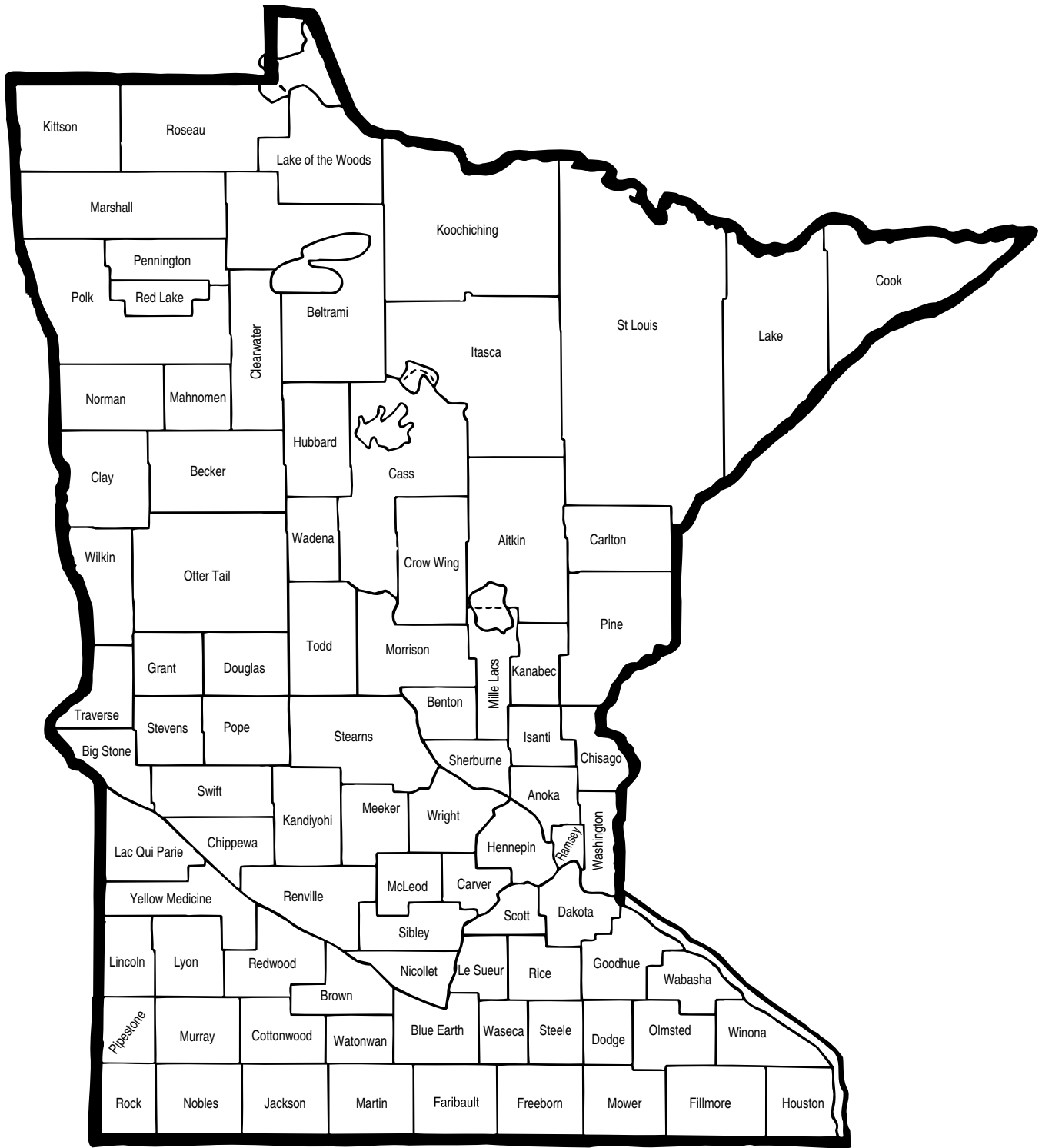
Green Peas.....	1st
Oats.....	1st
Sugarbeets.....	1st
Sweet Corn.....	1st
Turkeys Raised.....	1st
Cultivated Wild Rice.....	2nd
Canola.....	3rd
Cheddar Cheese.....	3rd
Hogs.....	3rd
Soybeans.....	3rd
Spring Wheat.....	3rd
Corn.....	4th
Dry Edible Beans.....	4th
Flaxseed.....	4th
Mink Pelts.....	5th
Sunflowers.....	5th
Ag Exports.....	6th
Honey.....	6th
Milk Cows.....	6th
Milk Production.....	6th
Red Meat.....	6th
Total Cheese.....	6th
Potatoes.....	7th
Barley.....	9th
Cattle/calves on feed.....	9th
All Wheat.....	10th

Let's Take A Trip to the Minnesota Farm!



You're sure to find these crops and animals where their symbol appears on the map above. Many will be found in other parts of Minnesota, too.

MINNESOTA



ANSWERS

Who's Who? (p. 3)

1. ram lamb ewe
2. gander gosling goose
3. boar piglet sow
4. rooster chick hen
5. bull calf cow

How many have 2 feet?

2 of the animals, 6 total on page.

How many have 4 feet?

3 of the animals, 9 total on page.

Clue In (p. 4)

1. pig
2. sheep
3. chicken
4. cow
5. horse
6. goose

Where Does Meat Come From? (p. 5)

1. lamb-lamb chop
2. pig-ham
3. beef cow-hamburger
4. chickens-drumstick
5. fish-fish fillet

Footballs are covered with cowhide leather.

From Moo to You (p.6)

Accept logical stories in children's own words.

The general sequence is:

1. Cows are milked with milking machines.
2. The milk is pumped into a bulk tank and then to a tank truck, which will take it to the processing plant.
3. Milk is tested to make sure it's clean and safe to drink.
4. Milk is put in bottles or cartons.
5. Your family buys milk at the store.

Foods We Eat (p. 7)

Foods that don't belong: french fries, muffin, corn, pear, cheese.

Pretty Seedy (p. 8)

1. What are seeds for? They are baby plants that will grow into new plants.
2. Some seeds we eat are sunflowers, corn kernels, peas, beans, nuts, coconut.

Way to Grow (p. 10)

Across: 1. leaf, 2. root; 3. stem

Down: 4. seed, 5. fruit

Number the pictures left to right - 3 2 1 4.

Plants are Food (p. 13)

Foods that don't belong: onion, cherries, lettuce, tomato, watermelon.

Ag ABC's (p. 15)

Crops: corn, cotton, rice, soybeans, wheat.

Livestock: beef cattle, dairy cattle, poultry, sheep, swine.

Horticulture: apples, flowers, sod, trees, vegetables.

Dairy: butter, cheese, ice cream, sour cream, yogurt.

Crack the Code (p. 16)

1. It's just a little horse.
2. Five days old.
3. She can't go under a hill.
4. Time to get a new fence.