

From Seed To Harvest

Objective The students will sequence crop production using crop production terms and describing the steps needed to get crop from seed to the market.

Grade Level 1-3 4-6

TEKS:

| | |
|----------------------|-------------------------------|
| S- 1.6B; 2.6C; 3.10A | S- 4.9E; 4.15A; 4.15F; 4.10A; |
| SS- 1.7; 1.9; 2.10 | 5.6 |
| | SS- 5.13 |

| TAKS: | GRADE | OBJECTIVES |
|---------|------------|------------------|
| Reading | 3, 4, 5, 6 | 1, 3, 4 |
| Writing | 4 | 1, 2, 3, 4, 5, 6 |
| Science | 5 | 2, 3, 4 |
| Math | 3, 4, 5, 6 | 2 |

Assessment Summary:

Materials: Paper, pencils, farm equipment magazines, Flat Stanley by Jeff Brown
 List of local farmers and ranchers who are will to participate in this project. The local Farm Bureau or extension service can help supply this list.

- "Farming the Farm" Activity Sheet
- "From Seed to Harvest" Information Sheet
- "Crop Farming Matchup", pictures and phrases

Equipment: Overhead, transparencies of farm equipment

Objective: The students will report to the class using the information obtained from their journal writings supplied by local farmers and ranchers.

How Are Field Crops Planted?

Lesson Plan

All grades 1-6

1. Introduce new vocabulary: tillage, plowing, seed bed, disc, harrow, fertilizer, planter, irrigation, harvest, combine, storage bin, hopper.
2. Read the book Flat Stanley, by Jeff Brown, to the students. Inform the students that they will become like Flat Stanley in a very special way. Instruct the students to draw pictures of themselves on paper. Also have the students write a letter to a local farmer explaining that they are studying about field crops and would he/she be so kind as to keep a journal for them for two weeks explaining how they take care of their farm from planting to harvesting, including record keeping. For the lower grades the teacher may have to have the students sign pre-written letters to the farmers.
3. During the two weeks that the farmers are working on the student's journal these activities can be used.
4. Plant a garden using the lesson guide of "How Does My Garden Grow?" Take some pictures of the planting. When the journals are returned compare the steps in planting a garden to those of planting field crops.
5. Identify pictures of farm machinery from farm magazines and from farm catalogues that are easily obtained from local farm equipment stores.
6. Have students complete "Farming the Farm" and/or "Crop Farming Matchup."
7. Have students write a story about "Producing Crops" using all the steps of farm production in their stories. Lower grades may want to give stories orally and work together with partners.
8. For grades 4-6 students should write a compare/contrast composition between a garden and field crops. This should be done when the journals are completed and returned to the students. The TAKS outline for mode of writing should be followed. For grades 1-3 the students should make statements about the differences in both and the teacher can then write them on the board and have the students copy the sentences.
9. This lesson can be adapted to include local farmers/ ranchers, and/or from the United States or the world.

Extension

1. Arrange a field trip to a machinery dealership or farm to see the actual equipment used to plant crops in Texas.
2. Invite a farmer or rancher to the classroom to discuss how he/she prepares the soil, plants and harvests a crop.

ADAPTED FROM A LESSON BY BECKY ROSS OF CALIFORNIA.

From Seed To Harvest

Farmers must make many decisions before planting a crop on their farm. The most important decision is the crop to be planted. Farmers generally rotate their crops. This means they plant one type of crop one year and a different type the next. In other words they don't plant the same type of plants two years in a row. A rotation helps control diseases and insects by not providing a host crop for more than one year. Rotations might be 3 or more years. An example of a crop rotation is corn—soybeans—wheat planted in succession.

The quality of the seed is the next consideration. There are many varieties and hybrids of seed which the farmer has to select from each growing season. No single variety is best suited for every soil or growing condition. Farmers try to select varieties which will produce the highest yields. Most farmers plant certified seed. This is seed that has been tested and is guaranteed to have a high germination rate, few weed seed, and be free of plant diseases.

Before a farmer plants his crop he must decide how and when to till his fields. Tilling or tillage means to prepare the soil and make a good seed bed in which to plant the seed. Tillage normally begins after the last crop is harvested. The farmer uses a disc that he pulls behind his tractor. The disc mixes the stubble left over from the last crop with the soil. As this stubble rots over the winter it provides nutrients, or plant food for the next crop.

In the late winter, the farmer again plows his fields. This time he is destroying any weeds or grass that might have grown during the winter. He may also put out fertilizer, or plant food, that will help the crop grow. He wants to make sure the seed bed is smooth and there are no big dirt clods in the field. To do this he uses a disc, that he pulls behind his tractor. A harrow follows the disc and finishes breaking up the clods and makes a fine seed bed.

When there is no more danger of frost the farmer plants his seeds. He attaches a planter, which he fills with seed, to his tractor. The planter places the seeds into the soil at the right depth and spacing to provide the best growth. Fertilizer may be applied at the same time to provide nutrients to the crop as soon as the plants start to grow. The planter leaves enough space between the rows of seeds so the farmer can pull a cultivator later in the growing season. The cultivator remove weeds from between the rows and helps aerate the soil. Row crops are generally cultivated two times a year.

The rest of the season the farmer watches his fields for signs of disease or harmful insects. If necessary, he may call an aerial applicator to fly over his fields and apply the proper chemicals to control insects or diseases that could damage his crop.

Many farmers, especially those in the drier areas of Texas, use irrigation to supply water to their crops when needed. However, many farmers depend on rainfall as the only source of water for their crops.

When it is time, the farmer harvests his crop with a machine called a combine. The front part of the combine (the header) pulls the plants into a bar that cuts them off. The combine then removes the grain from the stem and leaves. The grain is temporarily stored in a hopper on the combine. The stems and leaves are thrown back out on the ground. When the hopper on the combine is full the grain is unloaded onto a truck which hauls it to a large storage bin until the farmer is ready to sell it.

Adapted from Ohio Crop Production Steps Brochure



Preparing the seed bed



Planting the seeds



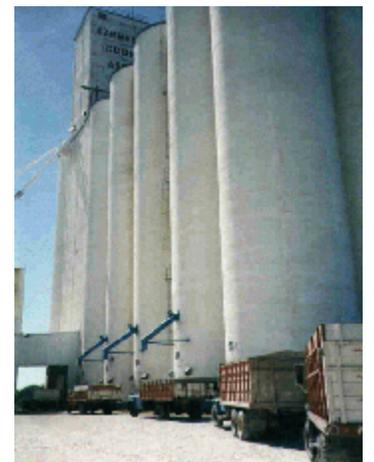
Spraying for disease and insects



Harvesting the crop with a combine



Combine unloads grain into truck



Trucks deliver grain to an elevator for storage



Grain is loaded on to a ship for export to other countries



The stubble is plowed under to protect and enrich the soil

Farming the Farm

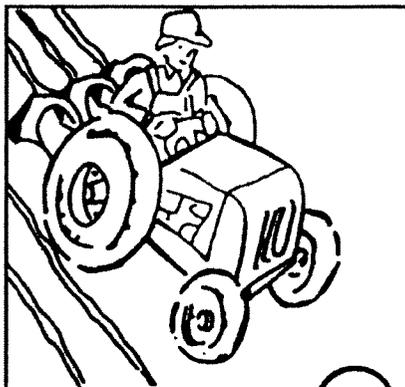
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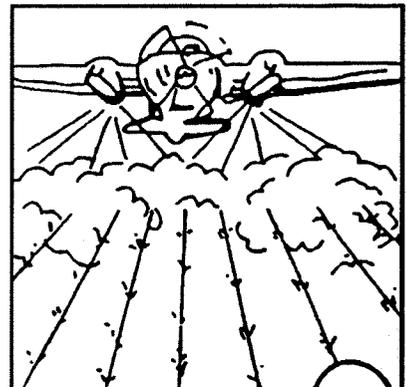
Crop farmers do many things to get food to you. The pictures below show some of the things a crop farmer does. Write 2 under the picture that shows what the farmer does first. Write 2 under the thing the farmer does next. Put all the pictures in the right order by writing the numbers 3 to 9 under the rest of the pictures. Then cut them out and paste them on a new piece of paper in the right order. Then finish the story by coloring the pictures.



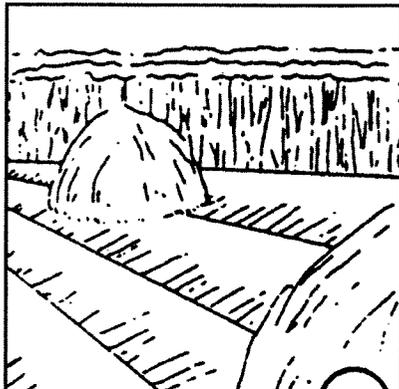
Seeding



Plowing



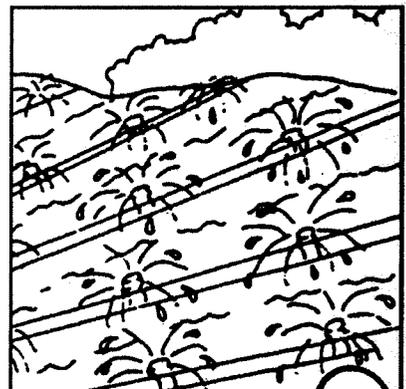
Spraying for pests



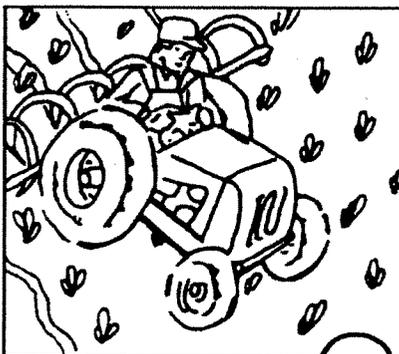
Harvesting



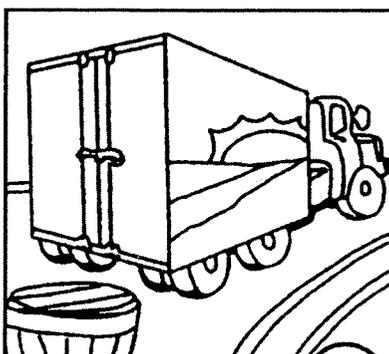
Storing in silo or barn



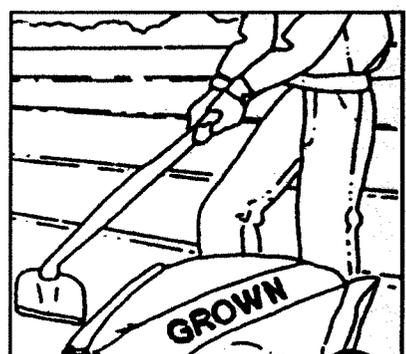
Irrigating



Cultivating



Trucking to market



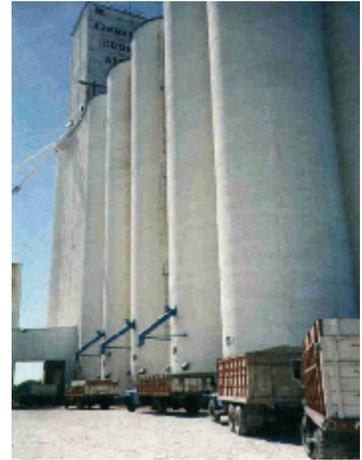
Fertilizing



Adapted with permission from the National FFA Organization's "Food for America" materials sponsored by Mobay Corporation, Ag Chemicals Division as a special project of the National FFA Foundation.

Crop Farming Matchup

Cut out the crop production step pictures and put them in the correct order. Match the pictures with the sentence that describes the activity.



Crop Farming Matchup

Cut out the following crop farming activity phrases and match them to the correct picture.

The stubble is plowed under to protect and enrich the soil.

Trucks deliver grain to an elevator for storage.

Spraying for disease and insects.

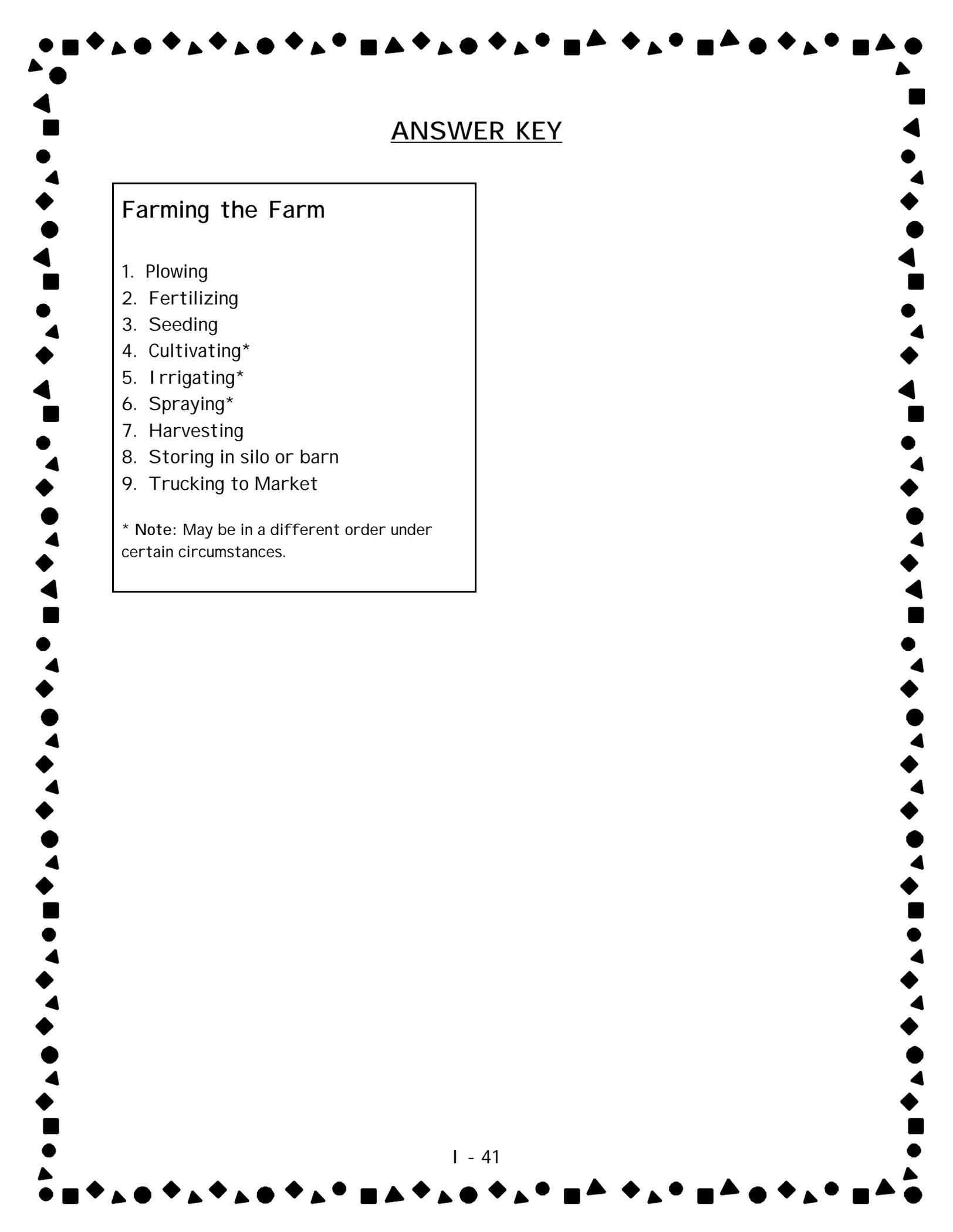
Grain is loaded on a ship for export to other countries.

Planting the seeds.

Preparing the seed bed.

Combine unloads grain into a truck.

Harvesting the crop with a combine.

A decorative border composed of various geometric shapes including circles, squares, triangles, and diamonds, arranged in a repeating pattern around the perimeter of the page.

ANSWER KEY

Farming the Farm

1. Plowing
2. Fertilizing
3. Seeding
4. Cultivating*
5. Irrigating*
6. Spraying*
7. Harvesting
8. Storing in silo or barn
9. Trucking to Market

* Note: May be in a different order under certain circumstances.