

Farming by Gail Gibbons (Holiday House, New York, 1988) ISBN 0-8234-0862 and 9-8234-0797-7 (pbk.)

Literature Annotation: This book provides an introduction to farming and the work done on a farm during the four seasons.

Grade Level: 3

Duration: 90 minutes

Maryland State Curriculum

Economics Standard: Students will develop economic reasoning to understand the historical development and current status of economic principles, institutions, and processes needed to be effective citizens, consumers, and workers participating in local communities, the nation, and the world.

4.A.2.a Explain how producers make choices because of limited natural, human, and capital resources

4.A.2.c Describe steps in the production process to produce a simple product

Geography Standard: Students will use geographic concepts and processes to examine the role of culture, technology, and the environment in the location and distribution of human activities and spatial connections throughout time.

3.B.1.a Describe how geographic characteristics affect the ways people live and work, and the population distribution of a place and region

3.D.1.a Describe how people in a community modify their environment to accommodate changing needs for transportation, housing, and how people make a living

Social Studies Skills and Process Standard: Students shall use reading, writing, and thinking processes and skills to gain knowledge and understanding of political, historical, and current events using chronological and spatial thinking, economic reasoning, and historical interpretation, by framing and evaluating questions from primary and secondary sources.

6.A.1 Use appropriate strategies and opportunities to increase understandings of social studies vocabulary (Grade 3)

Reading Standard: Students will use a variety of strategies to understand what they read (construct meaning).

1.D.1 Develop and apply vocabulary through exposure to a variety of texts (Grade 3)

1.E.3 Use strategies to make meaning of text (during reading) (Grade 3)

Objectives

Students will be able to...

- identify economic resources used by farmers to produce marketable goods.
- explain the production sequence of a farm product.
- identify methods used by farmers to conserve the soil and prevent erosion.

Vocabulary

natural resources: the renewable, and non-renewable gifts of nature that can be used to produce goods and services, including but not limited to land, water, animals, minerals, tress, climate, soil, fire, seeds, grain and fruits.

human resources: the health, strength, talents, education and skills that humans can use to produce goods and services.

capital resources: the goods that are manufactured and constructed by people and used to produce other goods and services, including but not limited to factories, warehouses, roads, bridges, machinery, ports, dams, and tools. (money is not a capital resource)

production: the act of creating goods and services by combining economic resources

Additional Vocabulary: crops, livestock, erosion, contour farming, terraces, strip cropping, shelter belts, cover crops, pasture, irrigation

Teacher Materials

- Book: *Farming*
- Resource 1 a-f: *Resources Used on a Farm* (1 set for each group of four students)
- Erosion demonstration materials: 2 paint trays filled about $\frac{3}{4}$ with top soil, spray bottle filled with water with nozzle that can be set for a hard or soft spray
- Resource 2: *Erosion Stoppers* (on overhead transparency or document camera)

Student Materials

- Resource 3: *Production of Bread* (1 per student: You may want to use your own photographs tailored to suit the type of farming in your community.)
- Sentence strip (1 per student)
- Resource 4: *Production Steps* (1 per student)

Teacher Background

Plowing loosens soil for planting. Over time, the wind and the rain can erode the soil layers. Farmers use practices to prevent erosion.

The three economic resources are defined as follows:

1. Natural resources are gifts of nature used to produce goods and services. They include land, water, oil and mineral deposits, the fertility of the soil, climate, timber, and so on. Some of these natural resources are used up in the production process, others renew themselves, while still others can be renewed through the conscious effort of people.
2. Human resources are people using their skills and talents to do mental and physical work.
3. Capital resources are those goods, created by human efforts, that are used to produce other goods and services. They include machines, tools, roads, bridges, factories and so on. They are things that can be reused over and over again.

Motivation:

Ask the students to name some of the foods they had for breakfast. Chances are some of the products they used were grown or raised on a farm. Write the word **farm** on the board and add this definition: *Farms are places where vegetables, fruits and grains are grown and where farm animals are raised.*

Then add the word **agriculture** and explain that *agriculture is the science of cultivating (working with the soil), producing crops, and raising livestock (farm animals.)* Explain that farmers have to think about the best type of farming for their location, kind of soil, climate, and length of growing season.

Ask students to tell about some farms they may have visited. You may be able to identify some of the farms they have visited as being specialized to produce a particular crop or kind of livestock.

Tell the students you will be reading a book that shows how a farm family works all year long on their farm. Conduct a Read Aloud of the book, *Farming*.

Development

1. Remind the students of the three kinds of economic resources: human resources, natural resources, and capital resources. Point out that, in this story, the farmer and his family were the human resources who performed many kinds of work on the farm to produce their goods for market. In the production process, they used many natural and capital resources.

Divide the students into groups of four. Assign each group a season of the year. Tell the groups they will be looking back at the story to identify the natural and capital resources used on the farm in that season of the year. Distribute poster board and a set of the “Resources Used on the Farm” cutout pictures to each group. Have the groups title the poster board “Resources Used on a Farm in _____” and write the name of the assigned season of the year on the line. Then have them draw a T-chart with the titles “Natural Resources” and “Capital Resources”.

Have them work to identify the correct natural and capital resources and color and glue the resources onto the T-charts. Display the finished posters and discuss which resources were used in more than one season and which were used in one season. Finally, write a plus (+) sign between the four season posters, add an equal (=) sign after the last poster and ask the students to identify the **products** (crops and/or livestock) that were produced by the farmers during the year of farming. List these products after the equal sign.

2. Explain to the students that cultivating the soil is an important part of farming. When the soil is loosened and turned, it is vulnerable to the forces of **erosion** from water and wind. **Erosion** takes away the valuable top soil and blows or washes it away to other places. Discuss with the students why erosion is an environmental concern of the community.

Display Resource 2: *Erosion Stoppers*.

Say: “Farmers use different anti-erosion methods. This transparency illustrates five ways farmers can plow and use fields that will slow the erosion of the top soil:

1. Contour farming: instead of plowing in straight rows, the farmer plows rows that follow the natural curves of the land to prevent erosion.
2. Terraces: farmers build step-like levels into the sides of steep hills to prevent rainwater from washing down the richer top soil.
3. Strip-cropping: used to keep thin-growing crops from washing away with the soil, farmers alternate the rows of the thin-growing crops with thick-growing crops to help hold the soil.
4. Tree Shelter belts: rows of trees that protect the fields from the force of the wind.
5. Cover crop: farmers need to rest the soil from time to time to let nutrients build up. Instead of leaving the loose soil to blow away, fallow fields are often planted with grasses to make pasture. The grass is a cover crop.

Explain that most farmers use one or more of these methods to stop erosion of their top soil. Have the students draw a few hills on a blank sheet of paper. Ask them to change one hill by terracing it. Draw plants on the terraces, Then have them add contour lines to another hill. Have them draw tall crops and short crops in alternative contour rows. Have them add a tree shelter belt along the edge of one field and color the remaining area green for a fallow field pasture for cows. Have them label the anti-erosion methods on the drawing.

3. To demonstrate the benefits of terracing on steep hills, do the following demonstration: Fill two paint trays about $\frac{3}{4}$ full with loose top soil. Mold terraces into 1 of the trays of dirt. Each terrace level should be flatter than the slope of the paint tray. Tilt the trays to make the slope of a steep hill. Spray water equally on each tray. Have the students notice how the flat terraces hold the water longer and allow for the water to seep into the soil. You can try different water forces by changing the nozzle on the squirt bottle.
Ask students these questions:
 1. How did the farming terraces help to stop erosion of the top soil?
 2. Where does the soil go that is eroded from the farmer's land?
4. Remind the students that the farmer in the book *Farming* produced many different crops and livestock to sell. Tell the students that most farms today are **specialized**, that is, they produce one or two main crops or kinds of farm animals. Re-read the last three pages of the book to identify these kinds of specialized farms: dairy farms, egg and poultry farms, grain farms, fruit farms, vegetable farms and cattle farms and ranches. Have students use books, videos, or internet sites to find out about the different kinds of specialized farms. Some resources are listed at the end of this lesson. The students should identify the natural and capital resources and the steps used in the production process for each type of specialized farm. Have the students report to the class.

Ask students how the specialized farmers depend on each other and how workers (producers) and consumers in suburban and urban regions (communities) depend on the farmers. Ask students how the farmers depend on other workers in their community and on workers in suburban and urban communities.

5. Write these following words on the board. "physical features" and "human-made features." Tell the students the meaning of these two words.
physical features – characteristics of place or region that are part of nature – landforms (e.g., mountain) water bodies (e.g., lake)
human features – characteristics of a place or region that are made by people and reflect their culture (e.g., barn, house, fence, road)

Show the students “Spring on the Farm” pages. Ask students to name the physical features they see. (*hills, forest of maple trees*)

Now ask students to name the human-made features they see. (*house, barn silo, farm stand, sugarhouse, orchard, machine shed, chicken house, pond, fences, fields, and road*)

Explain to students that all of the human-made features show how people have changed the land to meet their wants.

Conclusion

Have the students conclude that all farmers use natural and capital resources to produce a product for the market. There is a sequence of production steps used at each type of farm.

Thoughtful Application of Knowledge

For this activity, students will use a worksheet of pictures to sequence the production process for one kind of specialized farm, a wheat farm.

Distribute the worksheets and a sentence strip to each student. At the beginning of the strip, have the students paste the title, “Production of Bread.” Ask the students to correctly sequence the production process by sequencing the pictures. Have them add arrows between the steps. Then distribute the “Production Steps” worksheet and have the students complete it independently as an assessment of knowledge.

Extension

Plan a field trip to a local farm. Have the students take pictures of the production process on the farm. These photographs may be used to create a big book or a computer generated program to share the production process with other classes.

Additional Resources

Hooray for Dairy Farming, by Bobbie Kalman, Crabtree Publishing Co., New York, 1998, ISBN 0-86505-650-1

Hooray for Sheep Farming, by Bobbie Kalman, Crabtree Publishing Co., New York, 1998, ISBN 0-86505-655-2

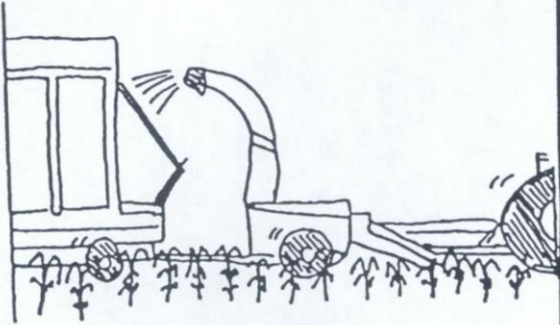

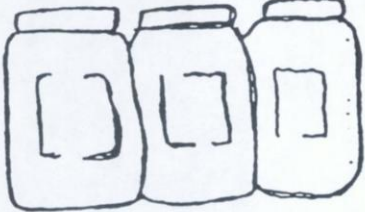
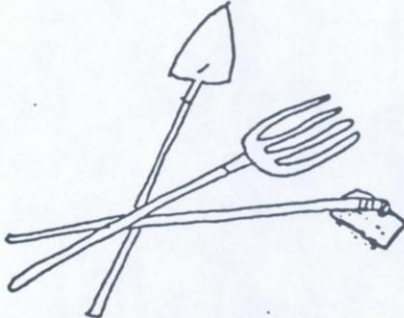


Hooray for Bee Keeping, by Bobbie Kalman, Crabtree Publishing Co., New York, 1998, ISBN 0-86505-654-4

Hooray for Orchards, by Bobbie Kalman, Crabtree Publishing Co., New York, 1998, ISBN 0-86505-653-6

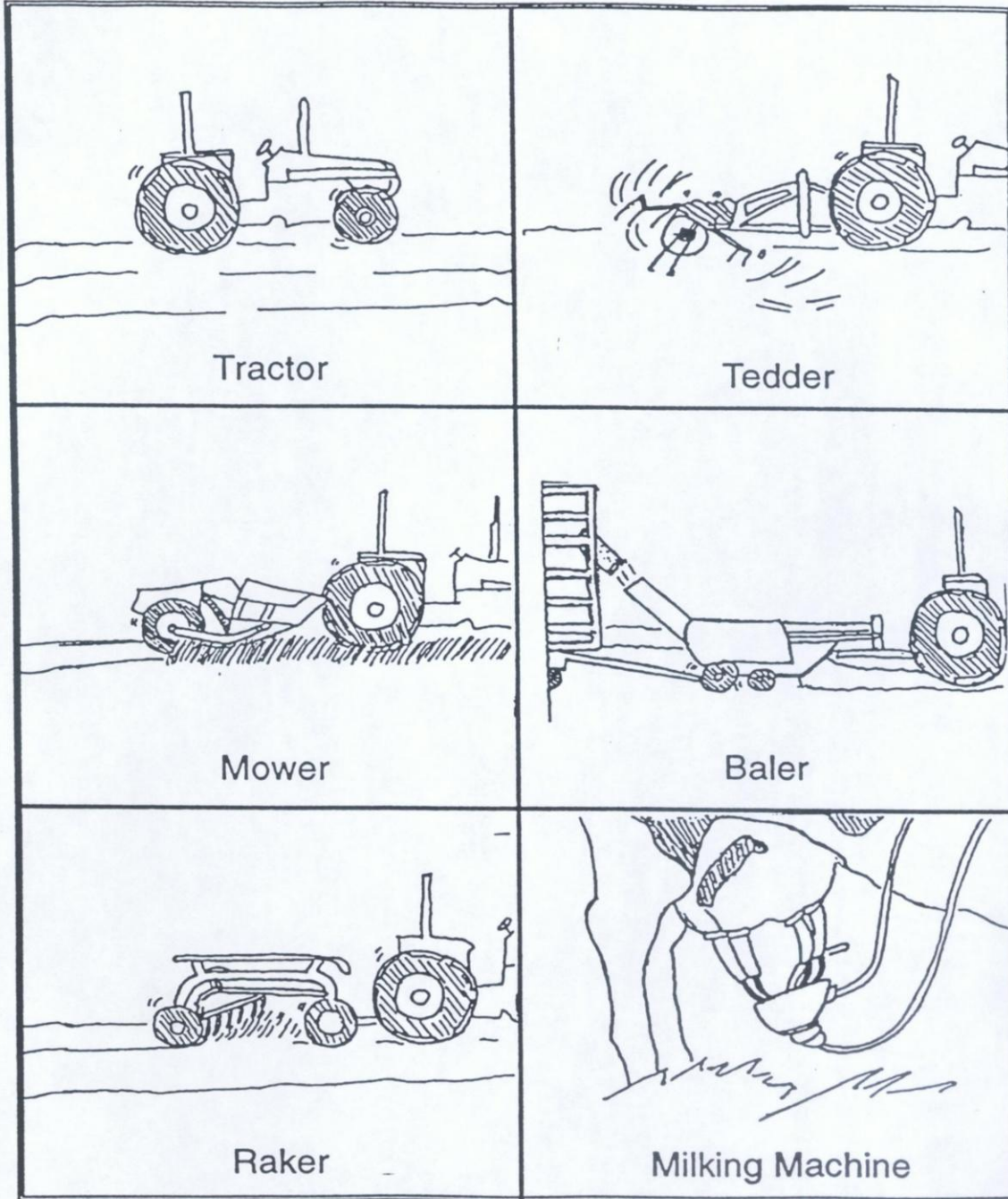
Portrait of a Farm Family, by Raymond Bial, Houghton Mifflin Co., Boston, 1995, ISBN: 0-395-69936-3

The Pumpkin Patch, by Elizabeth King, Dutton Children’s Books, New York, 1990, ISBN: 0-525-44640



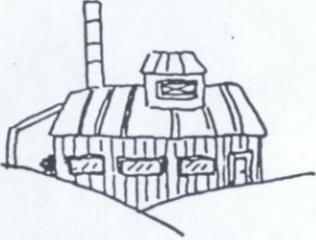
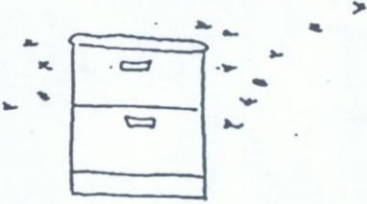
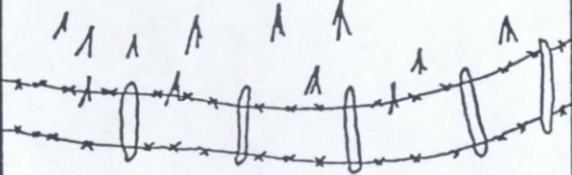

Resources Used on the Farm

 <p>Harvester</p>	 <p>Baskets</p>
 <p>Canning Jars</p>	 <p>Spade/Shovel Hoe/Rake/Pitchfork</p>
 <p>Bucket</p>	 <p>Plow</p>

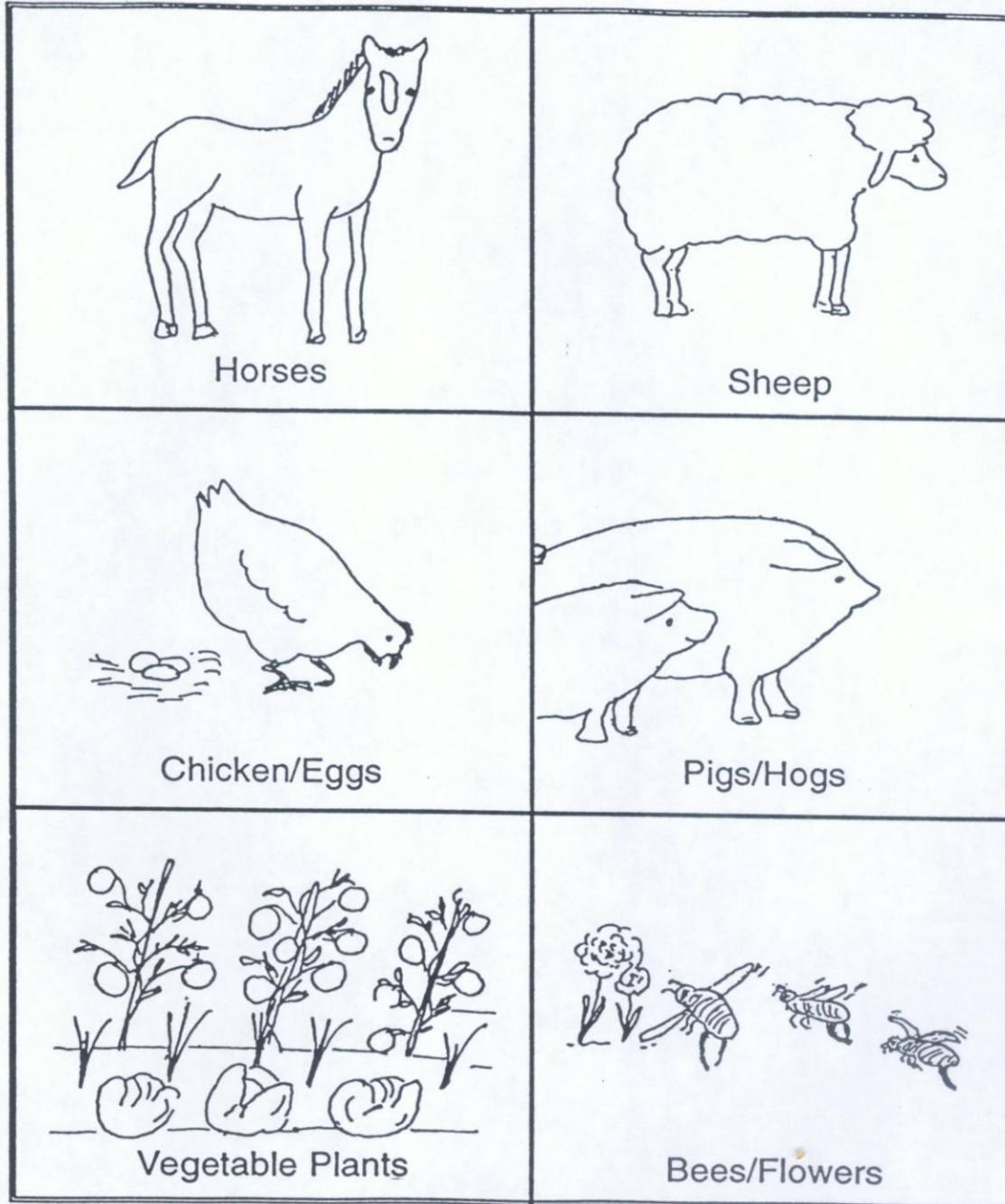
Resources Used on the Farm



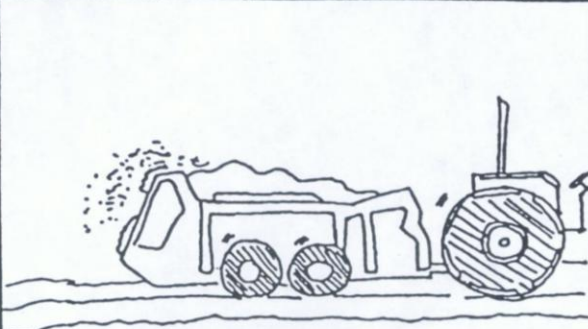
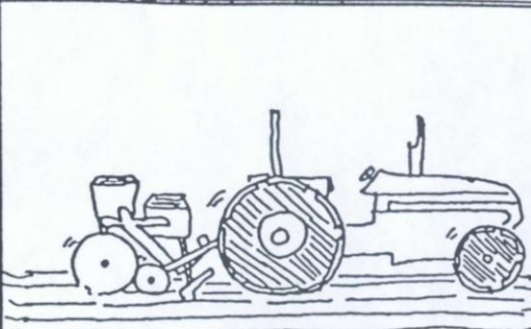
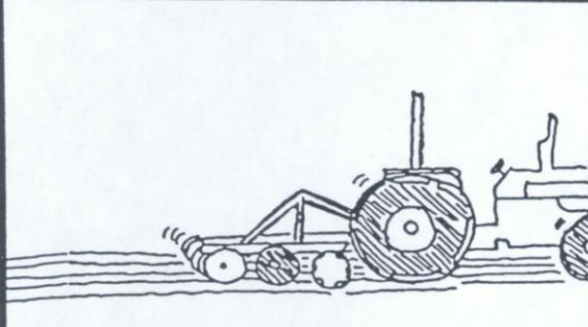
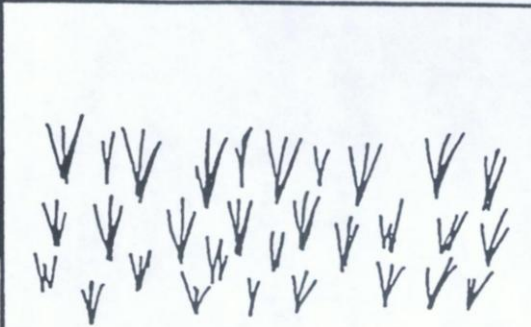
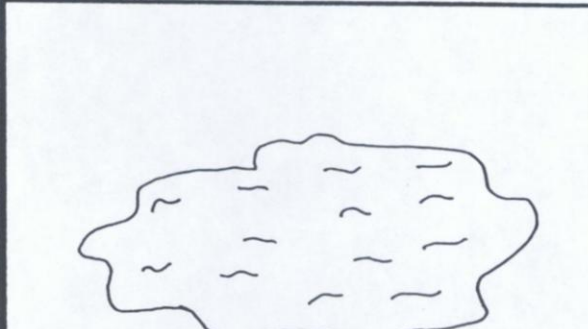
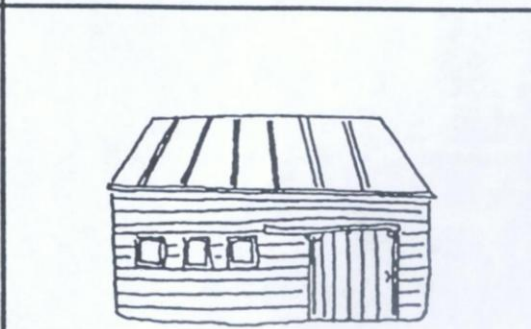
Resources Used on the Farm

 <p>Barn and Silo</p>	 <p>Chicken House</p>
 <p>Sugarhouse</p>	 <p>Honeybee Boxes</p>
 <p>Fences</p>	 <p>Farm Stand</p>

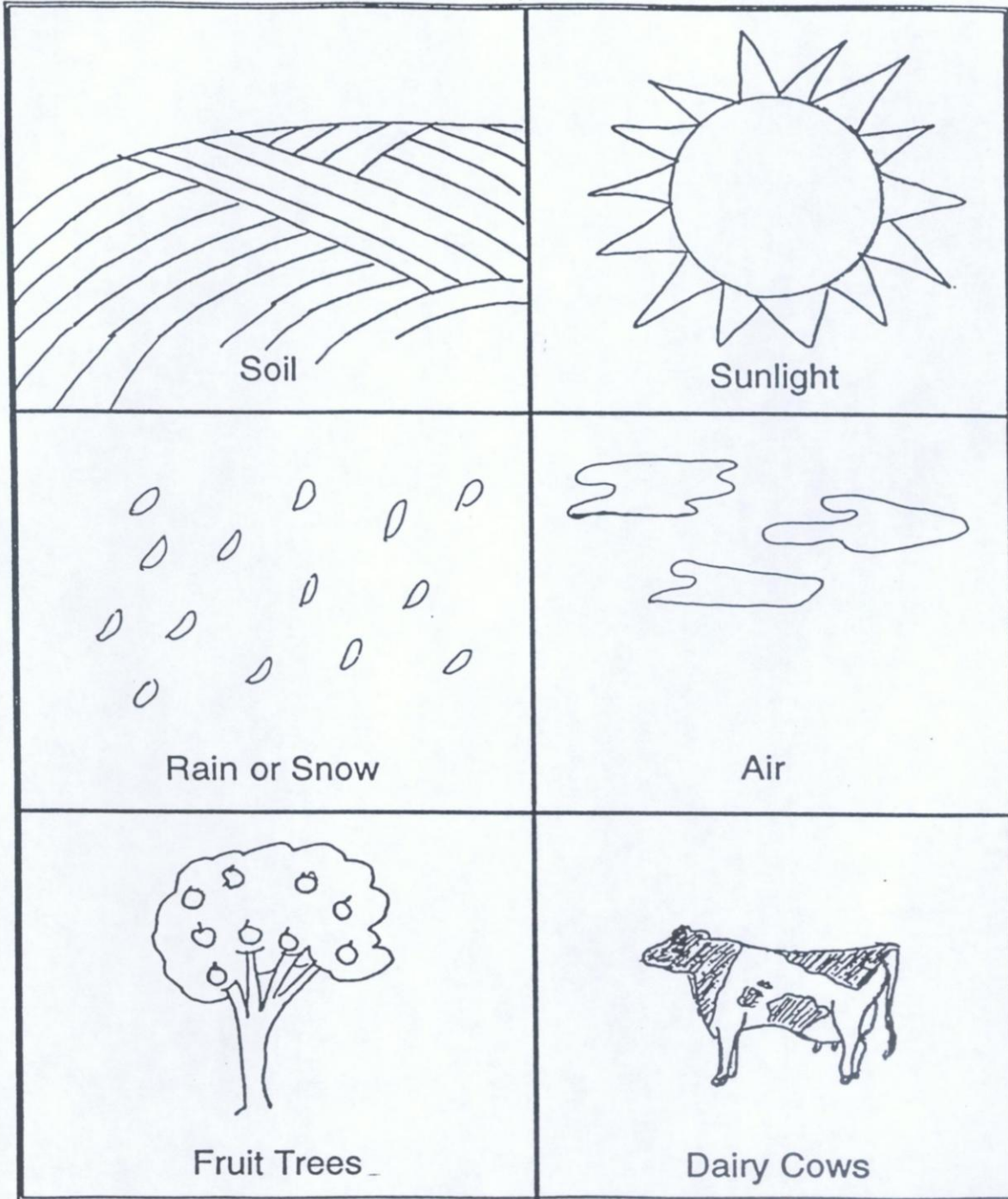
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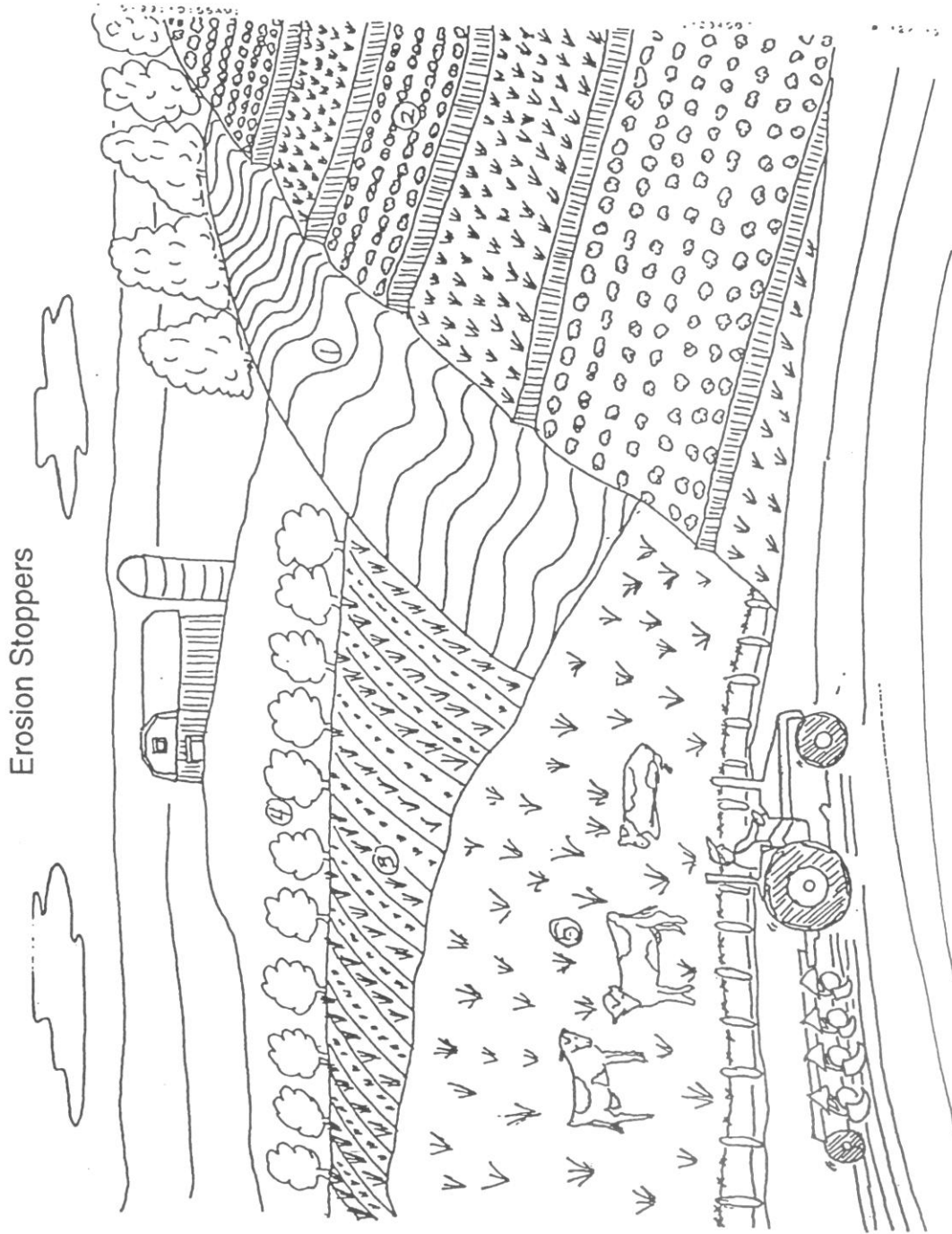


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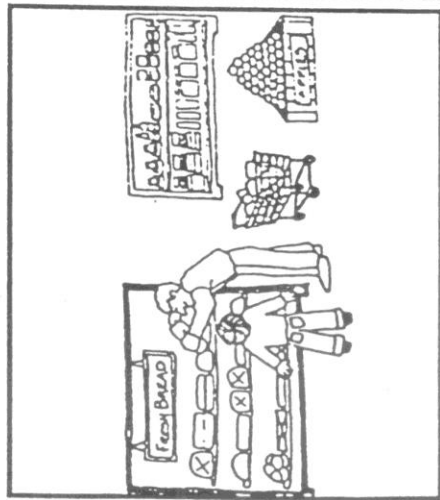
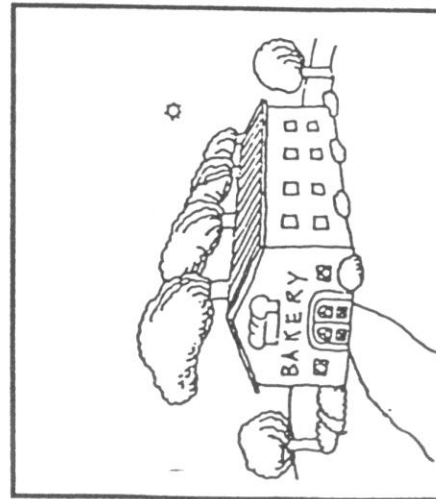
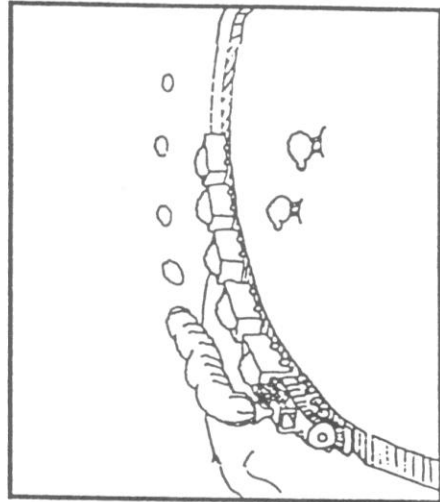
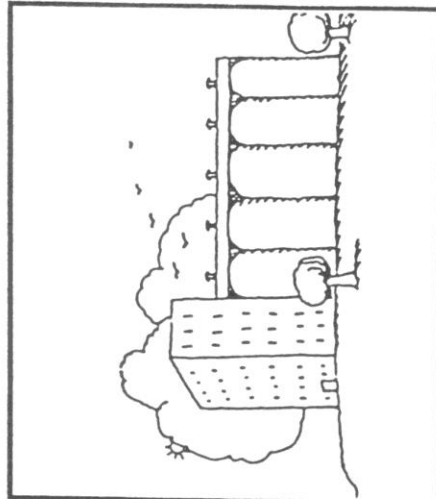
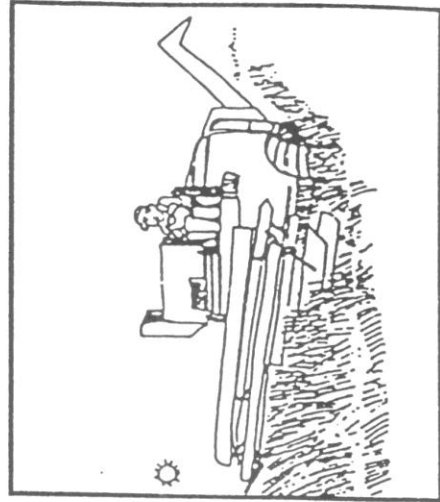
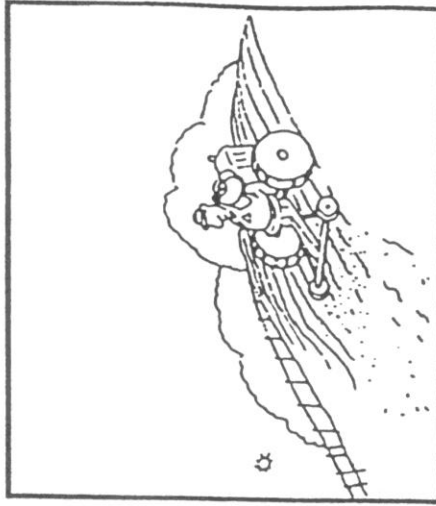
 A line drawing of a tractor pulling a fertilizer spreader. The spreader is releasing a cloud of small particles behind it.	 A line drawing of a tractor pulling a planter. The planter has several rows of planting equipment.
Fertilizer Spreader	Planter
 A line drawing of a tractor pulling a harrow. The harrow has several curved blades.	 A line drawing of a field of grass, represented by many small, upward-pointing blades.
Harrow	Grass/Pasture
 A line drawing of a pond, shown as an irregular shape with wavy lines representing water.	 A line drawing of a machine shed, a rectangular building with a gabled roof and a large door.
Pond	Machine Shed

Resources Used on the Farm





Production of Bread



Resource 3

Resource 4

Name _____

Production Steps

1. What is the specialized product produced by this farm?

2. Identify the natural and capital resources used by the farmer to produce this product.

Natural Resources	Capital Resources

3. Write 4 of the important steps in the production process of this product.

Step 1:
Step 2:
Step 3:
Step 4: