

FARMERS – CARETAKERS OF THE LAND

LEVEL: 7-8

SUBJECTS: Science, Language
Arts, Social Studies

VOCABULARY:

Natural resource, resource management, land stewardship, habitat, wildlife, conservation, contour farming, no-till cultivation, crop rotation, windbreaks, drip irrigation, grass waterways, reforestation

LEARNING GOAL:

Students shall develop their abilities to connect and integrate knowledge from all disciplines into their own knowledge bases.

MATERIALS

“Farmers are Stewards of the Land” student worksheet

BACKGROUND

Natural resources of soil, water and air are vital to agricultural production. Management of natural resources to insure a healthy environment is a requirement for the farmer to produce food and fiber. Modern farming methods have evolved through the need for conservation (wise use and planned management) of natural resources. Examples would be: contour farming, no-till cultivation, crop rotation, drip irrigation, windbreak and grass waterway construction. Farmers use management techniques which help wildlife find food and shelter. Typical practices include: leaving cover areas, crop residues in fields or some crops standing; developing water sources; maintaining salt licks.

PROCEDURE

1. Begin the unit by having the class develop a group definition for “natural resources” in the environment – sun, water, air, soil. Ask students to speculate as to why these resources are renewable. Use the concept of budgeting an allowance to make a desired purchase to introduce resource management for agriculture. Explain that through the years farmers have needed to change farming methods in order to more wisely manage and conserve natural resources. Ask students to describe scenes from movies or fictional accounts of past misuse of natural resources, example: 1930’s dust bowl.

OBJECTIVE

The student will:

- identify modern farming methods which promote wise use of natural resources.
- recognize the economic link between agricultural production and natural resource management.
- describe farming practices which provide food and habitat for wildlife.
- define land stewardship.

CONCEPTUAL AREA

Awareness and appreciation– survival is dependent upon how well people manage natural resources.

Decisions – responsible human decisions are necessary to maintain food and natural resources.

2. Write the following terms on the chalkboard: **contour farming, no-till cultivation, crop rotation, windbreak, drip irrigation, grass waterways, reforestation**. Divide students into brainstorming groups and have each group develop descriptions of these farming practices. Ask students what resource(s) would be conserved by each practice. Compare and contrast responses as a class activity, helping students to correct any inaccuracies in their group definitions. What would be the economic consequences for the farmer if these methods were not utilized – decreased yields, loss of fertile soil, water contamination, increased water use?

3. Ask students to think of some common wildlife (deer, birds, fish, small game animals) in Kentucky and describe what these animals require for a **habitat** or home. Have various students describe ways for farmers to provide food and shelter for wild animals. Then, have the class identify negative consequences for wildlife due to unwise use of natural resources.

4. Use the “Farmers are Stewards of the Land” worksheet to help students understand the concept of land stewardship which involves a cycle of replenishing renewable resources and conserving non-renewable resources.

EVALUATION

Provide several problem situations related to utilizing natural resources for agriculture – drought, contaminated lake or stream, soil loss by wind or erosion, forest fires in timber areas, excess deer population. Ask students to use information learned to develop a **written** solution to the problem which would be acceptable to a farmer interested in conserving natural resources.



Farmers are stewards of the land

Every year 9 billion trees
are seeded
on farmland.

Farmers use reduced
tillage practices on
72 million acres and
26 million acres are
plowed in narrow strips
to prevent erosion.

Farmers
and ranchers
provide food
and habitat
for 75 percent
of the nation's
wildlife.

U.S. farmers
maintain 170,000
miles of windbreaks
and 1.3 million
acres of grass
waterways.