

**Lesson- Our Farmers Existing “Slice” of Soil as representing our global availability of farmland  
Grade Levels- 3-6 with modifications**

**Purpose-** The students will obtain a general global knowledge about the amount (*and type*) of available and productive farmland that farmers have access to today.

**Objectives-** Through teacher modeling and guidance, each student will visually observe how our global natural resources affect our farmer’s ability to create and preserve the existing farmland today and in the future.

**Behaviors-**

- Students will use learned information about soil as a basis for understanding the importance of this natural resource to our farmers today.
- Students will observe teacher’s demonstration representing the amount (*and type*) of soil that is available for our farmers to farm today.
- Students will transfer the information by coloring the various apple slices on his/her apple worksheet and write the needed information to explain each particular slice of apple.
- Students will dialogue (*and examine*) together ways in which mankind can use and preserve our soil for productive farmland.
- Students will begin to question what will happen to our farmland/farmers if our precious farmland available becomes used for another purpose.
- Students will be encouraged to create and implement a plan of action for preserving our available farmland.

**Brief Review / Introduction / Procedure / Direct Instruction-**

- Review notes from the previous day’s lesson for children to recall the importance of the earth’s soil and our dependence on the soil for survival. Highlight several important points by writing on board- “We know that soil ...” Students may want to write these statements on his/her paper.

- Introduction-

One of the most important natural resources that covers much of the earth’s land surface is SOIL. We have learned that all living things depend on it as a source of food or habitat either **directly** or **indirectly**.

Our food producing land (the Earth) remains the same and yet our society keeps purchasing the farmland and changing the soil/land structure for use in other ways (ie. developments, space for roadways, airports, amusement parks, shopping, etc...). Globally the world’s population is increasing and the need for more homes, churches, parks, etc... continues to grow. Some of our existing farmland is being bought for these purposes.

I’m going to demonstrate by using an apple how much of our global soil/land is now used for farming. On your worksheet you will color each section and write the needed information to explain each particular slice of apple. I’ll guide you through the process. When we are finished we’ll discuss our findings and determine ways in which we can use and preserve the available farmland.

*(For each cutting, show the children what to color and write. Students may want to provide the answers.)*

-Cut the apple in four equal parts. Three of the parts represent the oceans of the world. The fourth part represents the land area.

-Cut the land section in half lengthwise. Now you have two pieces of land. One piece represents land such as deserts, swamps, Antarctic, arctic, and mountain regions. The other piece represents land where man can live but may not grow food (ie. large cities, too high or too low elevations, etc...).

-Slice one of these sections lengthwise into five equal parts. Each of these parts represent the areas of the world which are too rocky, too wet, too hot, or where soils are too poor for production, as well as areas developed by man.

-Carefully peel the skin off the last section. This apple peel represents the soil of our earth on which mankind depends on for food production.

Review the items written on the student's worksheet. Allow the students to discuss their findings, ask questions, and provide insights for continued use and preservation of our natural resource- soil/land.

1. How will we feed the world's population if we keep using our soil/land for other purposes?
2. How do we teach the world to use the soil/land wisely **now** and **for the future**?
3. What type of people/resources in our community might we go to receive both information and assistance?
4. How can our world leaders assist us in preserving the soil/land?
5. What might **you** do as a child to use and preserve our soil/land now and for the future?
6. List community, state or local laws that you would create to preserve our rich soil and farmland?

**Closure-** Each student will write three things that he/she has learned in our lesson today in his/her journal.

**Homework-** (Optional) List one thing that your family could do to preserve our soil/farmland.

**Extensions-**

1. Invite a soil conservationist into your classroom to discuss things that are being done to preserve the soil.
2. Contact local/state representatives, TMAC authorities, developers, schools, etc... for a panel discussion.
3. Given a community, region, or state map depicting the types of land in that particular area, have the students brainstorm ways in which the demographics could be changed to provide more productivity for our farmers.
4. Collect various types of soil and test it to determine whether it is safe/healthy to be used as farmland.
5. Research and determine what can be done to the soil so that it can be used as productive farmland.

**Materials-** apple, knife, apple worksheet, student journal

**Our land's soil- Sampling of review information**

-Grab a handful of soil from a field or in your own backyard, and see if you can find the many living things in it. (green plants, earthworms, bugs, bacteria, mold, etc...)

-Plants and animals that do not live in the soil still depend on the soil and its living things. (planting and harvesting food, taking minerals from the soil, building on the soil, creating products from the soil-sod, brick, sand, stone, etc...)

-Plants and soil create dams. The soil helps to hold the water back and the plants roots helps to hold the soil together thus creating a natural dam.

-Most soil is made up of small bits of rock that have been broken up from solid rock. (trees break up rocks, earthworms grind up small rocks, wind, water, temperature changes, ice, all help to break up solid rocks)

-Soil erosion is the wearing away of topsoil by wind and water. This can be a good thing if worn out soil areas receive the good soil. If erosion occurs in fields without crops, the farmer is losing valuable topsoil. Food grown on eroded soil lacks in vitamins and minerals.

-Soil provides a place for plants to anchor their roots and be held in place to receive sunshine and air in order to grow. Soil also supplies plants with water and minerals, two necessary ingredients needed for the growth of plants.

-Soil provides us with various elements to use. (oxygen, hydrogen, carbon, nitrogen, sulfur, phosphorus, potassium, iron, calcium, magnesium, copper, zinc, boron, manganese, etc...)

-Soil is one of our planet's most important resource.

**State Standards-**

Earth Sci. 3.5.A; Geography 7.4; Economics 6.3.A, 6.4.D; Environment/Ecol. 4.2.A and C, 4.4.A