

Earth's valuable soil

Materials

- Large unpeeled apple(s)
- Sharp knife
- Cutting board
- Pie chart (on page 2) for each student
- Globe or world map

Objective

Illustrate how little of the Earth can be used to grow crops

Suggested grade levels

K-4

Alaska Content Standards

Math A1; C1; E1-3; Science A14; Geography A1,2; C1; Government F2,9; G1-3.

Terms to define

arable
resources
regions
desert
swamp
Arctic
Antarctic



This project presented by Alaska Agriculture in the Classroom through funding from the Alaska Division of

Agriculture and the Alaska Farm Bureau. For information, visit www.agclassroom.org/ak



Introduction

What are some of our important natural resources? *Students may provide such answers as oil, water, air, coal, trees, animals, gold, etc.*

All of those are important natural resources, but we often forget to mention one of our most important resources: soil.



Directions

Pass out pie chart graphs. Cut the unpeeled apple as you explain the fractions.

Imagine the apple is the planet Earth. *Cut the apple in quarters.* Oceans occupy three quarters of our earth. (Ask older students if they know what percentage that is 75 percent.) *Set three of four quarters aside.*

That leaves just one quarter (25 percent) of our earth as land area. *Take this quarter and cut it in half.* Of the remaining two one-eighth sections of land, one represents the land that is not suitable for farming. This includes deserts, swamps, mountains and the Arctic and Antarctic regions. Do we have some of those lands in Alaska? Yes, only about 4 percent of Alaska land is suitable for farming. That means 350 million of 365 million acres in Alaska is not arable. *Set one of the eighths aside.*

The other one-eighth represents where man can live and grow crops. *Slice this one-eighth section lengthwise into four equal parts.* Now I have four 1/32nds of an apple. The first of these represents land too wet for food production. It isn't swampland, but it may flood during the growing season.

Another section represents land that is too rocky and poor to grow food. A third 1/32nd represents areas that are too hot. *Set three of the 1/32nd sections aside.*

The last section represents the area of the world developed by man and used for farming. *Carefully peel the last 1/32nd section.* This small bit of peeling represents all of the soil of our earth on which humans depend for food.



Like water and air, soil is a very important resource.

Follow-up activities

Have older students rank resources in order of importance. Are some resources equally important for life? Our others important because we rely on them in our modern world?

Have students (or show younger students) areas on a map or globe where crops cannot grow.

Related lesson

Farming the Great Land

Adapted from Utah and Oklahoma AITC materials

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Directions

Label the following

$\frac{3}{4}$ of the Earth covered with water

$\frac{1}{8}$ of the Earth that is desert, swamp, mountains or polar regions

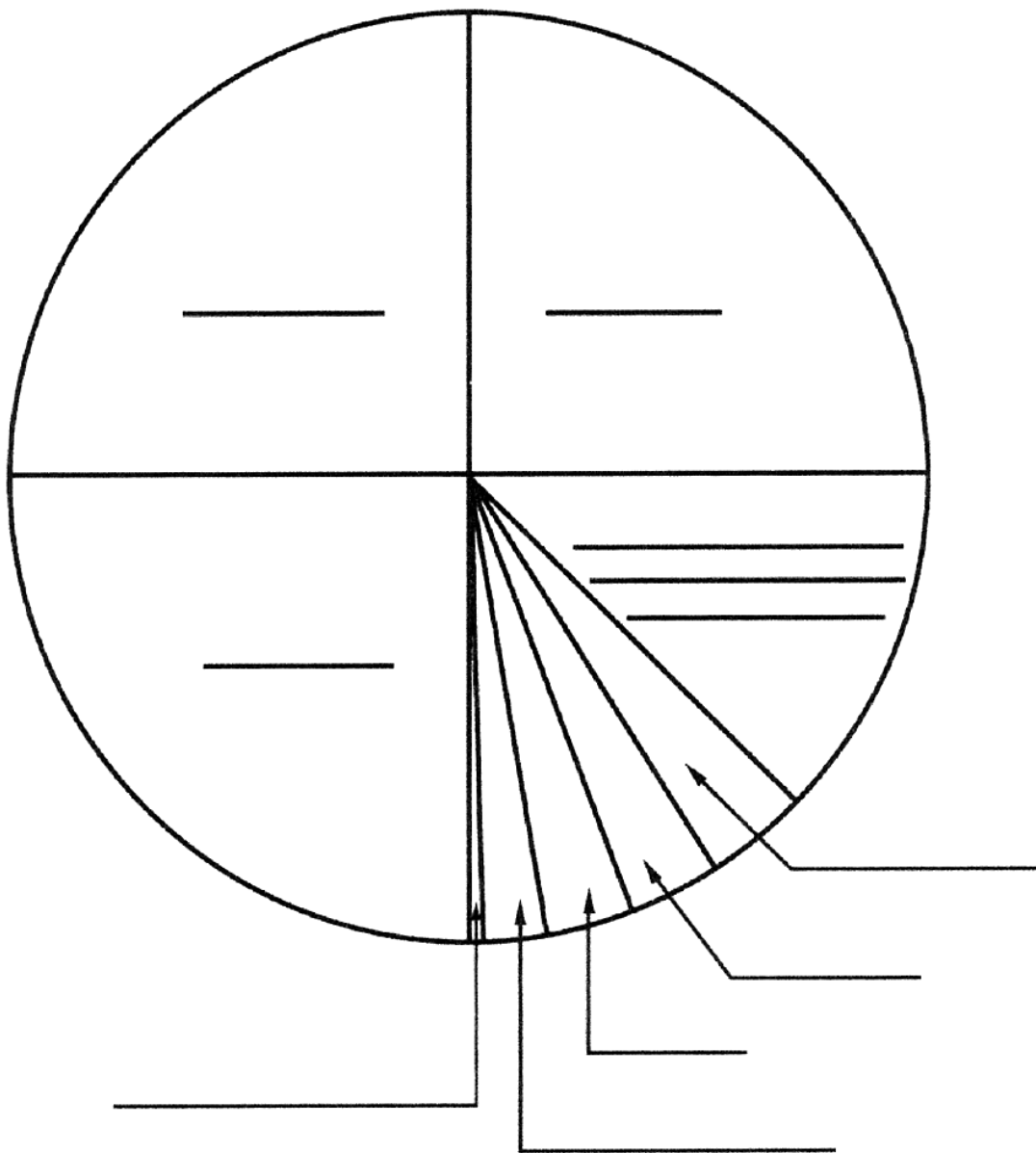
$\frac{1}{32}$ of the Earth that is too rocky for growing crops

$\frac{1}{32}$ of the Earth that is too hot to grow crops

$\frac{1}{32}$ of the Earth that is too wet to grow crops

$\frac{1}{32}$ of the Earth where crops can be grown

Tiny fraction that represents soil of that cropland



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