

The Earth Apple



Standards

3-4 Geography Standards

Benchmark 2: The student analyzes the spatial organization of people, places, and environments that form regions on Earth's surface.

5-6 Geography Standards

Benchmark 2: The student analyzes the spatial organization of people, places, and environments that form regions on Earth's surface.

3-4 Math Standards

Standard 1: Number and Computation

Benchmark 1: (Number Sense) The student uses numerical and computational concepts and procedures in a variety of situations.

5-6 Math Standards

Standard 1: Number and Computation

Benchmark 1: (Number Sense) The student demonstrates number sense for rational numbers, pi, and simple algebraic expression in one variable in a variety of situations.

Vocabulary

- Resource: a source of supply
- Suburban: the residential area on the outskirts of a city or large town
- Topsoil: the surface soil usually including the organic layer in which plants have most of their roots

Discussion

“What does it take to grow food?” (You are fishing for “land.” Keep discussing until someone comes up with that word).

Activity

Today the world's population is 6.25 billion and increasing, but the amount of land we have for growing our food supply is not! This means that it will become harder to grow food for everyone on Earth.

Imagine this apple represents the Earth.

If you cut the apple into four equal pieces, three of those pieces are covered by water. Only one of the pieces is land, or $\frac{1}{4}$ of the Earth!

If you slice this piece in half, you get two pieces that are each $\frac{1}{8}$ of the whole apple. One of these pieces represents the land that people can live on. The other piece represents deserts, mountains and forests where people do not live.

If you take the $\frac{1}{8}$ piece that represents the land where we can live and cut this piece into 4 equal parts. Three of those $\frac{1}{32}$ pieces are for cities and towns, homes, schools, and shopping malls and suburban developments—places where we can live, but can't grow food.

All that is left is this tiny piece—this is $\frac{1}{32}$ of the whole earth. Take this last piece of apple and carefully peel off the skin. This tiny piece of skin represents the farmable land or topsoil layer where we grow our food.

Our land is a precious resource. Scientists and farmers, by using technology, are producing more food. But, with a fixed amount of food-producing land and an ever-increasing number of people, we need to continue looking at different methods to grow food. It is also necessary to protect the environmental quality of our air, water and land.

Additional Discussion

- If we only have this much land to use and we have lots more people coming, what are we going to do to save any land for wildlife?
- They will suggest all kinds of things but what you are looking for is “grow more on the land we are now using.”
- When you get them to realize this fact you can tell them that agriculture uses modern tools and technology to increase yields. One tool is planes, others are pesticides and fertilizers.

Assessment

Students should learn:

- Food comes first. People must eat before they worry about anything else
- The world has a limited amount of land on which to grow food
- World population is going up and people in poor countries want better diets (more meat, milk, and eggs)
- If we use more land to grow food we cannot use it for other things
- High-yield agriculture is necessary to save room for wildlife, wetlands, rainforests, etc.

Source: Nebraska Ag in the Classroom, Between the Rows, February 2003