

HARVEST *of the* MONTH in the CLASSROOM



APPLES

HISTORY

Fossil evidence shows that apples existed in Europe and Asia as early as 11 million years ago! But the apples we eat today probably are closely related to a seed dated to 1000 BCE, found in modern day Kazakhstan. Apple trees originated in central Asia and were brought to North America by European settlers in the 1600s. In fact, the only apple native to North America is the crab apple. But by the 1800s, the United States grew more varieties of apples anywhere in the world.

FUN FACTS

Apples are 25% air. This means they are less dense than water, perfect for apple bobbing!

It takes about 36 apples to produce one gallon of apple cider.

The world's largest apple peel was created by Kathy Madison in 1976, in Rochester, NY. It was 172 feet, 4 inches long.

Over 7500 types of apples are known. 120 varieties are grown in Massachusetts.

FARMER BIO



Breezeland Orchards in Warren grows apples, peaches, and raspberries on 100 acres and has been in operation since 1896! Farmer Mark Tuttle's favorite apple variety is Pink Lady, which makes pink applesauce. Breezeland Orchard's apples are sold at their farm stand, other farm markets and to local schools for lunches.

APPLE AS THE EARTH

Grades 3-5 • 30 minutes



OBJECTIVES

Students will understand the scarcity of farmable land on Earth. Students will learn different ways that we can care for and build our top soil. Students learn about related historical events.

ESSENTIAL QUESTIONS

How do we care for soil?
How do our farming practices impact the environment?

MA STATE FRAMEWORK(s)

3rd - 5th Earth Science & Math Standards

MATERIALS

Apple, either one per student or one for teacher to show entire group
Cutting board (s)
Knife (s)
Pie chart worksheet

PROCEDURE

Introduction

Students will each be given an apple to cut into pieces to represent the distribution of resources on the Earth. At the end students will be left with one small piece of apple that represents the Earth's soil that can be used to grow food. Each time a cut is made, have the students fill in the "Apple as the Earth" pie chart worksheet (attached).

Activity

Have students cut the apple into four equal pieces.

Three of the quarter pieces represent the oceans. Have students set these pieces aside as there's no soil in the ocean.

The remaining quarter represents the land. Have students cut the apple piece in half. Now there are two $\frac{1}{8}$ sections. One of the sections represents land that is unsuitable for growing food: swamps, mountains, deserts, the Arctic and Antarctic. Have students set this piece aside.

The remaining $\frac{1}{8}$ piece represents land where people can live, but how much of this land has soil we can grow food on?

Slice the $\frac{1}{8}$ piece into four equal parts. Now there are 4 - $\frac{1}{32}$ pieces of apple.

One piece represents rocky soil which cannot support food growth.

Two pieces represents soil that is too wet or hot to grow food

The final piece represents all the workable farmland. But not all the soil can be used for farming.

Have students cut the peel off the final $\frac{1}{32}$ piece of apple. The piece of peel represents all of the topsoil that is used to grow the Earth's food.

Activity adapted from Utah State University Cooperative Extension.

Lesson developed in partnership with:
[Island Grown Initiative](http://IslandGrownInitiative.org)

APPLE AS THE EARTH

Page 2



PROCEDURE, CONT.

Wrap Up

Ask students the following questions:

Do we have a lot of soil on the Earth to grow food?

What are we doing to take care of the soil?

Share that we can take care of the soil we have and grow more by caring for the soil and using conservation minded farming techniques. If we turn our plate scrapings and other food waste into compost it can add more nutrients into the soil and help create more healthy soil. We can also use cover cropping and crop rotation to care for soil. Agroforestry, which incorporates fruit trees such as apples into farmland, also helps prevent soil erosion (loss of topsoil).

EXTENSION ACTIVITY

Watch a video (<https://youtu.be/pJgQOcVt1Hc>) on the dustbowl to show the effects that complete soil degradation can have on farmland and the world.

APPLE AS THE EARTH

Worksheet

Label the segments of the graph, using the information from the teacher's demonstration. When you are finished, color the graph using a different color for each segment.

