



An Apple a Day

Grade Level: 3-5

Goal

Students learn about different varieties of apples, make apple juice, and devise their own methods of extracting juice.

Curriculum Alignment

Find a list of which Common Core State Standards and NC Essential Standards this lesson plan aligns with on the lesson plan page at www.growing-minds.org.

Materials

Books to read

One Green Apple by Eve Bunting

Johnny Appleseed by Steven Kellogg

Supplies

For each group:

set of measuring spoons and cups

1 bowl

1 sharp knife

1 strainer

4 different apples

1 cutting board

1 grater

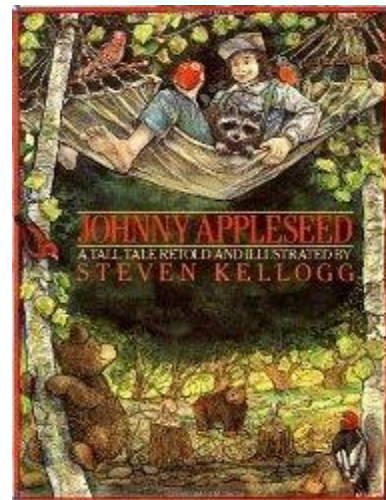
1 peeler

1 masher

1 funnel

1 paper plate

1 napkin



Read a Book

Read One Green Apple or Johnny Appleseed to learn more about apples and making apple cider.

Lesson

Have you ever eaten a Sheep's Nose?

Perhaps you've heard of Winesaps or Galas, maybe Honey Crisps? But have you ever heard of Hidden Roses, Winter Bananas, or Sheep's Nose? These are all kinds of apple varieties. A variety is a term used

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to classify plants and animals. There are 2500 apple varieties grown in the US and 7500 grown world-wide. But only 100 varieties are grown commercially. Most people are only familiar with Red or Golden Delicious, possibly Granny Smith. But there are HUNDREDS more! The Sheep's Nose apple gets its name from its shape – elongated and smoothly round. Fully ripe, it can turn a dark purple color.

Apples can be grown in all 50 states but only 36 states grow them commercially. A typical apple tree can produce 20 bushels of apples and each bushel weighs 42 lbs. In 2009, the average American consumer ate about 15 pounds of fresh apples.

Apples are processed into many different products, from baby food to vinegar. Another product is apple juice. Students will determine the method that obtains the most juice from an apple. This is a very open ended experiment, with the goal being to extract as much juice from an apple as possible. Each group will be given 4 apples and will be asked to invent a different way to get the juice out of each apple and decide as a group which way is the best. Students record their findings and conclusion in the table.

1. Give each group 4 apples of different varieties.
2. Talk to students about potential tests and experiments that they could conduct.
3. Be prepared to assist with using the sharp knives.
4. Make sure students are recording data as they progress.
5. Discuss the following questions:

Have students report their findings and explain their methods. Which method seemed to work best? Why?

It takes about 36 apples to make a gallon of apple cider – how many apples would it take using your most effective method? Have the students answer and add this to their data table.

Is there something else you think would have worked better – what is it and why do you think it would work better?

Would heating the apple make extraction easier? Why or why not?

How do you think this is done commercially?

Did the apple variety seem to make a difference? Why do you think it did or did not?