

A Grower's Work is Never Done

Students become familiar with the seasonal tasks of the cranberry grower

What are the seasonal chores of the cranberry grower?

Lesson Overview

In this lesson, students begin to learn about the seasonal work of the cranberry bog. They learn that farming cranberries is a year-long process that requires diligence and attention to natural cycles. The lesson is set in a fictitious context: A grower's loose leaf yearly planning file has been tossed about in the wind, and students will help pull together and organize the yearly to-do items into seasonal folders. To be successful, students must examine, analyze, and put into seasonal categories some of the primary tasks of a grower. Next, students attend to the technology that helps modern growers complete their work, matching tools to the tasks. By taking on this role of grower's helper, students begin to see the complexity of a cranberry bog and the grower's work. This is a first step toward developing an appreciation of, and a connection to, cranberry farming (specifically) and agriculture (in general). In addition, students glimpse the intersection of the natural world and the human endeavor of farming. This gives them an opportunity to connect their curriculum ("book knowledge") to real-world applications and implications.

Notes:

1. *Timing/Structure:* As written, this lesson may take longer than a typical, 45-minute classroom session. It will likely take up to 60 minutes. Consider breaking between Parts 1 and 2 if necessary. An alternative approach to this lesson is to plan on using structured classroom time only for the introductions to, and final discussions of, Parts 1 and 2. Student pairs can work independently at their computer station over a day or two to complete their sorting tasks, ordering the calendar (Part 1) and matching tools to tasks (Part 2).

2. This lesson is based on the very popular field trip experience developed at Bog Hollow Farm in Kingston, MA, by grower and former fifth grade teacher, Lydia Mathias. In her field experience, she provides real objects relating to the specific tasks. If you are able to gather even a few real objects, this lesson will be made all the more interesting and meaningful to students. If you can arrange for a grower to visit your classroom based on the themes and tasks of this lesson, or—better yet—to run a field trip to a bog—your students may benefit greatly. Many thanks to Lydia for her support and inspiration for this lesson.

Background

In cranberry growers' circles, it is not uncommon to hear that non-growers envy the growers. "You are so lucky," a community member might say. "You only have to work in the fall!" This view of cranberry growing—presumably due to the highly visible work of the autumnal harvest--couldn't be farther from the truth. In fact, cranberry bogs, like other farming systems, are always in a delicate balance, requiring growers to devote constant attention to them. Because the cranberry is a perennial, this means year-round attention. Each season has its own tasks and challenges. To meet these challenges growers, like other farmers, rely on various technologies (tools and processes).

For example, **autumn** is the most obvious time of activity on a cranberry bog. It's harvest time. The grower must coordinate transportation systems, people, and machinery to accomplish wet or dry harvest and ensure that the cranberries are examined and packaged for sale. Mechanized harvesters replace the old fashioned, tined scoops once used for the dry hand harvest, and mechanical sorters separate high quality dry-harvested berries from those unsuitable for use. For a wet harvest, growers use sprinklers, water management systems, boats, water reels, corrals, pumps, and conveyors to flood the bogs, agitate the vines, and gather the berries. Trucks or helicopters transport the cranberries from the bog. Even after the harvest, the work is not complete; the ditches that have served to help flood and, later, drain the bog must now be cleaned and cleared of mud. Helicopters and bog vehicles are useful technologies for this task.

Each of the other seasons brings its own, unique tasks. While **winter** may be a quiet time for growing, the vines still require care. The bogs must be flooded with a protective layer of water that will freeze over, preventing cold burns to the vines. Meanwhile, the growers must take care of bookkeeping, professional development, and maintaining both the bog (through brush and tree clearing) and machinery. Spring and summer bring new work. In the **spring**, growers are busy preventing

damage from spring frost, insects, weeds, and disease, as well as renovating and constructing bogs. They also attend to the important task of promoting pollination. In the **summer** growers attend to irrigation and continue to manage weeds and harmful insect populations.

While each season brings its special concerns, **throughout the year** cranberry growers must pay special attention to the amount of rain fall and respond to water levels. Contrary to the common belief that vines must be saturated, vines require good drainage. It is critical to prevent too much water accumulation around the cranberry vines during blossom development or during berry growth. The sun warms the water, and the water will burn the developing blossom and berry growth. Once burned, the growth will be completely destroyed and there will be no crop. Too much water will also promote disease to the vines and berries. Of course, the water levels will be crucial during autumn's harvest. Wet harvesting requires flood levels. Dry harvest will require dry vines, and so growers must keep the bogs well drained. Finally, during winter, a common practice is to flood the bogs every three or four years and allow the water to freeze. Over the frozen surface, growers spread sand. When the ice melts, the sand drops to cover the vines. In this way, growers can sand the vines (which encourages growth) without risking damage to them that might otherwise be caused by driving or walking on them.

Again, technology helps growers as they control the level of water throughout the bog. Built into each cranberry bog are flumes that allow water to flow on and off the bog. Each flume is equipped with a series of planks that can be added or removed to adjust the water level. Each season is critical; the cranberry grower must pay special attention to bog the each day.

Materials

Exploring Cranberries Curriculum Web Resources

Movie Presentation, **Away With the Wind**

Interactive: Sort by Season

Interactive: Tools for the Task

Teacher Key: Sort by Season

Teacher Key: Tools for the Task

Bog Blog: A Grower's Work

Optional: e-version or paper version of *"Neighbor to Neighbor": An Information Guide on Living near a Cranberry Bog* (provided on DVD, but also available as a pamphlet through the Cape Cod Cranberry Growers' Association)

Preparation

1. View the Power Point Presentation, **Away With the Wind**, and the interactives to become familiar with the storyline and the student assignments.
2. Arrange for time in a computer lab if necessary and set up an LCD projector so that whole group discussions can involve focused attention on one large display.
3. Plan to have students work in pairs.

Lesson

Part I: Sort by Season

1. Show the Power Point Presentation, **Away With the Wind**

Synopsis: Emily and David's dog, Bear, grabbed file folders from their cranberry grower parents' office. Bear ran outside, scattering important notes about key chores that must be done throughout the year. Emily and David recover all the papers, but now they must reorganize them.

Tell students that Emily and David require the students' help in completing this task.

1. Show students the screen of Sort by Season, which shows an image of scattered sticky memos, with each one showing a different cranberry growing task. Tell students that they must return each task to the growers' file folder corresponding to the season in which it is usually accomplished on the bog. To determine the season to which each task belongs, students should use their prior knowledge, pop-up information from the interactive, which provides clues, and their own reasoning. Consider completing one example with the whole class.
2. Provide 20-25 minutes for student groups to complete the assignment.
3. When the time period is over, instruct students to save their work to the Cranberry Bog Blog "Share It" folder. Conduct a class discussion comparing

the groups' responses and work together to resolve any discrepancies, if possible.

4. Afterwards, students can check their work by "helping Emily and David go online and consult the 'growers' manual' (the teacher key) to find the answers. Click on the appropriate icon to pull up this file.
5. Discuss any differences between the correct seasons for tasks and student answers, helping to determine why the task belongs in its given season.

Part II: Tools for the Task

1. Return to the story of Emily, David, and Bear:

Although the children were successful in reordering the files, they ultimately told their parents what happened. Mom and Dad were so impressed that they decided to hire Emily and David to help manage the bog. Their task was to help organize the technology required to run the bog. Because a new storage shed was recently built, much of the equipment has been in disarray. Emily and David need the students' help to reorganize it.

Tell students how they will help: Match each technology (tool) to its corresponding task, so that the tool can be stored in the appropriate season's section of the shed. Show students that they can click on video or images of the tools being used so that they can determine the task that it matches. Have students open their student resource, Tools for the Task.

2. Provide 20-25 minutes for students to complete this task. When students have completed this, you can show them another "page of the online grower's manual" (the key to matching tools and tasks).
3. Afterwards, choose a few discussion points from the list below to wrap up student learning. Consider assigning one or more of the others as a journal prompt. [Note: (a) is also the focus of the Bog Blog
 - a. Cranberry growers often hear from people who don't grow cranberries that they are lucky that they only have to work in the autumn. What examples would you give to someone to demonstrate that this is not true?
 - b. What do you think would happen if a grower did not do these tasks?
 - c. Cranberry growers must pay attention to and respond to natural cycles. What examples can you think of to illustrate this?

- d. How does technology help growers accomplish their work? Cranberry growing has been going on since before much of this technology developed. How do you imagine the cranberry bog functioned before some of these technologies came about?
- e. If you live near a farming area and students are familiar with the local agriculture, compare and contrast the seasonal work and technologies of your local area with cranberry growing. Be sure that if you live in a cranberry growing area, students familiar with it (through first-hand experience, perhaps) have a chance to share other tasks and insights.