

# Wood Fired Beets



## **Communication**

Students are given opportunities to read from the Visual Aid, answer and ask questions, and work together cooperatively and effectively in order to have time to relax and eat in small groups

## **Sustainability**

Beets are one of the most adaptable plants. They are grown all around the world and are responsible for a third of all sugar production.

## **Nourishment**

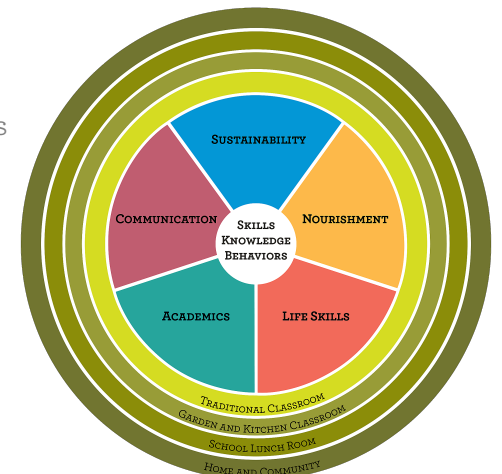
Students harvest, identify the edible parts, slice, season, cook and eat beets. They also learn how the beet plant is used medicinally.

## **Life Skills**

Students learn about seasonality, practice their culinary skills, participate in class routines and focus on listening, speaking and following directions.

## **Academics**

This lesson fulfills Common Core State Standards for following a multistep procedure; translating quantitative or technical information; collaborative discussion; speaking and listening; language; and acquiring words and phrases.



## Wood Fired Beets Abstract

### Summary

In this 7th grade science lesson, students harvest, prepare and eat beets cooked in the wood-fired oven while reflecting on their second rotation in the garden.

### Objectives

After this lesson, students will be able to:

- Identify the edible parts of the beet plant
- Harvest beets
- Handle post harvest crops with guidance

### Assessments

During this lesson, students will:

- Recognize that all parts of the beet plant are edible
- Harvest beets correctly
- Slice, season, cook and eat harvested beets

*Communication* is strengthened by opportunities to read from the Visual Aid, answer and ask questions, and work together cooperatively and effectively in order to have time to relax and eat in small groups. *Sustainability* is highlighted by learning that beets are one of the most adaptable plants. They are grown all around the world and are responsible for a third of all sugar production. *Nourishment* is enhanced by harvesting, identifying the edible parts, slicing, seasoning, cooking and eating beets. Students also learn how the beet plant is used medicinally. *Life Skills* are sharpened as students learn about seasonality, practice their culinary skills, participate in class routines and focus on listening, speaking and following directions.

*Academics* fulfill Common Core State Standards for following a multistep procedure; translating quantitative or technical information; collaborative discussion; speaking and listening; language; and acquiring words and phrases. See **Connections to Academic Standards** below for details.

*Edible Schoolyard* curriculum emphasizes developing community and personal stewardship, along with skills that will help students navigate different situations throughout their lives; and **harvesting** and preparing crops.

This lesson follows the BEETLES Project's *Learning Cycle* (Invitation-> Exploration -> Concept Invention -> Application -> Reflection) and uses their *Discussion Routines* (Think-Pair-Share, Whip-Around). All are highlighted in **Green\*** with an asterisk for easy identification. See the documents BEETLES\_Discussion\_Routines.pdf and BEETLES\_Learning\_Cycle.pdf included in **Resources** below for more information. Games and activities from other sources are also identified in **Green**, without an asterisk.

### Connections to *Academic Standards*

Common Core State Standards, English Language Arts and Literacy, Grade 7

- RST.7.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.
- RST.7.7 Translate quantitative or technical information expressed in words in a text into visual form (e.g., a table or chart) and translate information expressed visually or mathematically (e.g., in an equation) into words.
- SL.7.1 Engage effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on *grade 7 topics, texts, and issues*, building on others' ideas and expressing their own clearly.
  - SL.7.1.b Follow rules for collegial discussions, track progress toward specific goals and deadlines, and define individual roles as needed.
  - SL.7.1.c Pose questions that elicit elaboration and respond to others' questions and comments with relevant observations and ideas that bring the discussion back on topic as needed.
  - SL.7.1.d Acknowledge new information expressed by others and, when warranted, modify their own views.
- SL.7.2 Analyze the main ideas and supporting details presented in diverse media and formats (e.g., visually, quantitatively, orally) and explain how the ideas clarify a topic, text, or issue under study.
- SL.7.4 Present claims and findings, emphasizing salient points in a focused, coherent manner with pertinent descriptions, facts, details, and examples; use appropriate eye contact, adequate volume, and clear pronunciation.
- SL.7.6 Adapt speech to a variety of contexts and tasks, demonstrating command of formal English when indicated or appropriate. (See grade 7 Language standards 1 and 3 on page 53 for specific expectations.)
- L.7.1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.
  - L.7.1.a Explain the function of phrases and clauses in general and their function in specific sentences.

- L.7.1.b Choose among simple, compound, complex, and compound-complex sentences to signal differing relationships among ideas.
- L.7.1.c Place phrases and clauses within a sentence, recognizing and correcting misplaced and dangling modifiers.\*
- L.7.3 Use knowledge of language and its conventions when writing, speaking, reading, or listening.
  - L.7.3.a Choose language that expresses ideas precisely and concisely, recognizing and eliminating wordiness and redundancy.
- L.7.6 Acquire and use accurately grade-appropriate general academic and domain-specific words and phrases; gather vocabulary knowledge when considering a word or phrase important to comprehension or expression.

### Connections to *Edible Schoolyard* Standards

Edible Schoolyard 3.0

In the Edible Schoolyard Program

- 1.0 Students work with each other and teachers to develop community and personal stewardship, along with skills that will help them navigate different situations throughout their lives.
- 1.1.1 – 1.3.12 This lesson fulfills all Edible Schoolyard Program standards, numbers 1.1.1 through 1.3.12. See *The Edible Schoolyard Berkeley Standards* for details.

In the Garden Classroom, 7<sup>th</sup> grade

- Techniques 3.2.4 **Harvest** and prepare crops with increased independence; understand the seed to table concept, begin to recognize ripeness and understand seasonality.

## Wood Fired Beets Lesson

### Materials

- G7-7\_Visual\_Aid
- Job Board

### For the Wood-Fired Beet Station

- 2 Tables
- Cups
- Napkins
- Water pitchers
- Tablecloths
- Knives
- Cutting boards
- Tongs
- Metal mixing bowls
- Spatula
- Serving spoons
- 2 Sheet pans
- Oven mitts
- Firewood
- Bucket of soapy water (for hand washing)
- Towels
- Wood-fired oven

### Ingredients for the Wood-Fired Beets

- Beets with their greens
- Olive oil
- Salt

### Before you begin

- Create the Visual Aid
- Create the Job Board
- Collect all the materials
- Light a fire in the oven
- Create the wood-fired beets station by setting up the cooking tools on a table close to the oven and setting another table nearby for eating

### Timeline Overview

Total Duration: 90 minutes

1. *Invitation\** (5 minutes)
2. *Application\** (60 minutes)
3. *Concept Invention* (20 minutes)
4. *Reflection\** (5 minutes)

### Procedures

#### At the Opening Circle

1. *Invitation\**: (5 minutes)
  - a. Welcome students and introduce wood-fired beets as a delicious way to prepare, cook and eat beets that were harvested from the garden in a previous class.
  - b. Ask students to raise their hands if they have tasted beets.
    - i. Ask students to keep their hands up if they like beets.
  - c. Divide the class into 4 groups for garden jobs.
  - d. Rotate each group through the wood-fired beets station during garden work time.

In the Field (80 minutes total)

#### Garden Work Rotation

2. *Application\**: (60 minutes)

Students think about and discuss what they have learned and observed in the garden this semester.

  - a. Each group rotates through the Beet Station as the other groups work in the garden.

- i. The first group jumps to **At the Wood Fired Beet Station** step 3. *Concept Invention\** while the other three groups begin their garden work.
- ii. When the first group is done with step 3. *Concept Invention\** they return to (or begin) their Garden Work Rotation and the next group starts at **At the Wood Fired Beet Station**.
- iii. It takes a total of 80 minutes of class time to get all groups through steps 2 and 3.

### At the Wood Fired Beets Station

#### 3. *Concept Invention\**: (20 minutes)

Students roast beets in the wood fired oven, eat them and then harvest beets for the next group.

- a. Have students wash their hands and observe the heat radiating from the fire before standing at the table in front of a cutting board.
- b. At the table, hold up a beet with its greens and explain that the entire plant is edible.
- c. Demonstrate cutting the beets so that each slice is the same width, this helps them cook evenly.
- d. Pass out knives and beets to each student and have students cut the beets into ¼ inch slices.
- e. Have students season the beets with olive oil and salt in a large mixing bowl and then spread the beets onto a baking sheet.
- f. Put the beets into the wood-fired oven.
- g. While the beets are cooking, prepare the beet leaves by tearing the leaves into bite-size pieces.
  - i. Add the leaves to the beets when the beets are almost done cooking.
- h. While the beets and leaves finish cooking, read and discuss the Visual Aid.
- i. When the beets are ready, distribute napkins, water, beets and greens to students at the table.
- j. When they have finished eating, guide the group to the beet bed to harvest and wash beets for the next group.

### At the Closing Circle

#### 4. *Reflection\**: (5 minutes)

- a. Repeat the opening circle survey and ask students to raise their hands if they have tasted beets.
  - i. Ask students to keep their hands up if they like beets.
- b. Acknowledge any changes in opinion about beets.
- c. Play *Roses and Thorns*:
  - i. Each student names a “rose” (a highlight) and a “thorn” (a challenge) from their 2nd rotation in the Garden.

**Contributors**

All lessons at the Edible Schoolyard Berkeley are developed in collaboration with the teachers and staff of the Edible Schoolyard and Martin Luther King Jr. Middle School.

Learning Cycle and Think-Pair-Share discussion routine © The Regents of the University of California. All materials created by BEETLESTM at The Lawrence Hall of Science.

**Resources**

G7-7\_Visual\_Aid.pdf

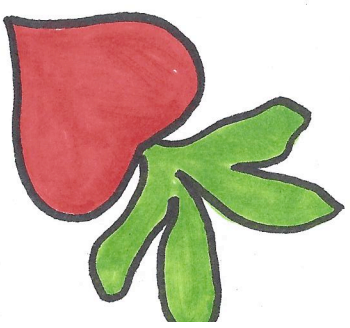
BEETLES\_Learning\_Cycle.pdf (See lesson G6-0)



# BEEETS



Chenopodiaceae  
goose - foot family



🍷 Native to the Mediterranean Sea

🍷 In the same family as chard, spinach and quinoa

🍷 Ruby Red is the most common beet, but there are many other varieties that are yellow, white, or striped

🍷 In the past, the root of the beet was only used medicinally and the leaves were eaten

🍷 Beets are high in vitamin C and have a high sugar content, making up 35% of all sugar production

