# Harvest of the Month

## Lesson Plan

**This Month's Theme:** BEETS

Harvest lessons are a fun way for K-4 students to explore, taste and learn about eating more fruits and vegetables every day.

## Activity Summary

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<th>Activity</th>
<th>Grade Level</th>
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| Intro              | ALL         | **Literacy:** speaking, listening  
                        **Science & Social Studies:** evaluating claims to determine whether or not they are true | 10 min|
| #1: Taste Test     | ALL         | **Literacy:** speaking, listening  
                        **Math:** measurement, graphing/tallying responses | 20 min|
| #2: Beet Art       | ALL         | **Arts:** dying, painting, and printmaking                                              | 30 min|
| #3: Beet Literature| K - 2       | **Literacy:** listening comprehension                                                   | 15 min|
| #4: Create a Beet Recipe | ALL     | **Science:** Inquiry  
                        **Literacy:** writing informative/explanatory text                                  | 40 min|
| #5: Grow a Beet Top| 3 - 4       | **Science:** observation, experimentation, structure of organisms                      | 30 min|
| #6: Beet Poetry    | 3 - 4       | **Literacy:** speaking, listening  
                        **Writing Arts:** exercising creativity                                               | 30 min|

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Begin with a fun interactive true or false activity. When a statement is true, students will stand up. When they believe a statement is false, they will sit down.

1. Beets are an edible taproot, and though they are most commonly known for their red or pink color, they can be orange and yellow as well. TRUE: Have you tried any other colored beets? What about striped beets?

2. Red beets get their color from the red pigment betalain. TRUE: can you say betalain? Betalain is known for its cancer-fighting properties.

3. Beets were first cultivated in East Africa, only for the consumption of their roots and not the greens. FALSE: Beets were first cultivated in the Mediterranean, solely for the consumption of the greens rather than the root.

4. Beetroot has one of the highest sugar contents of any vegetable. TRUE: Up to 10% of beetroot is sugar, but it is released slowly into the body, rather than the sudden rush that results from eating chocolate. A great way to get that energy, without the spike and crash that comes from candy!

5. The world’s heaviest beetroot weighed 24.48 pounds and was grown in England in 2001. FALSE: the beet that set this record was actually a whopping 51.48 pounds!

Ask these focusing questions throughout the lesson

• What is the part of the plant that we eat?
  • What color is it?
• How does it help our body?
• Where does it originate?
ACTIVITY #1 (20 MINUTES)

TASTE TEST

MATERIALS
• Several beets (Golden or red beets)
• Beets prepared in different ways (pickled beets, beet chips, roasted beets)
• Paper and writing utensils to draw and record observations
• Knife and cutting board

PREPARATION
Arrange the beets so that all students can see, touch, and smell them. You could put students in groups and give each group a beet. Alternatively, have students sit in a circle around the beets. If possible, cut open the beets so students can see the inside.

PROCEDURE
Instruct students to silently observe the beets, draw what they see, and write down words describing what they see, feel and smell. Encourage them to pass a beet (or more than one) around to touch and smell it. If you brought a range of varieties, ask the students to think about how the beets are different from one another. Cut open the beets and encourage students to make observations about the inside and outside of each variety. Give students time to observe, draw, and write about the beets. Have them share out their observations. Make a class chart with information and descriptive words about the beets.

Have kids try the pickled beets, raw beets, beet chips, or roasted beets. Vote on which method of preparation they like best and create a chart with the results. Have kids try the beet greens and roots. Hold a discussion about the tops and bottoms and parts of the plant that we eat.

This is a good chance to introduce/review vocabulary and practice detailed description. Is the outside of the beet smooth or bumpy? Does it smell sweet or sour? What other words could you use to describe the smell? What does it remind you of? After the class has discussed their observations, give students a few minutes to add to their drawing and writing.
The wonderful pigment naturally found in beets creates many opportunities to use these root vegetables as visual art tools.

Disclaimer: This activity may not be suitable to all populations. Some children can be sensitive to using edible vegetables as tools for art if they are food insecure. When describing these activities, try explaining how crops traditionally thought of as food, often share other purposes. You could talk about how corn is used in the gasoline people put in their cars, or how soybeans are turned into ink in printers. Similarly, historically beets have been used as a natural dye, often found in cosmetics. Alternatively, you can just use beet peels for this activity to reduce food waste. You will still receive similar results with just the peels.

**OPTION A: BEET PAINTING**

Use strained beet pulp as paint to create a work of art.

**Supplies needed:** Paintbrushes, paper, containers for water and paint, cooking pot, blender, strainer, beets (try red beets for the most vibrant color) and beet coloring sheet (see appendix).

**Directions:**
1. Cook beets, blend, strain and mix with water to create paint.
2. Beet juice stains easily, so have children wear smocks, if possible.
3. This is a great opportunity to teach students about shading: the more water you add, the lighter the paint becomes.

**OPTION B: DYING PAPER WITH BEET JUICE**

Harness the natural dye in beets to change the color of paper.

**Materials:** 4 medium beets, Cutting board, Knife, Blender, Measuring cup, Pot, Vinegar, Strainer, Tray, Heavy duty paper

**Directions:**
1. Wash the beets thoroughly.
2. Cut the leaves off the beets and compost them.
3. Chop the beets and stems into small chunks and put them into the blender.
4. Add 1 cup of water, tightly push the lid on the blender jar and liquefy the beets so they become a nice smooth pulp.
5. Pour the beet pulp into the cooking pot and add 1/4 cup vinegar. The vinegar will help seal the dye into the paper fibers and make the color last longer.
6. Place the pot on the stove and bring the mixture to a boil on high heat while you stir it with a large spoon. Place a lid on the pot and turn down the heat once it starts bubbling. Let the liquid simmer for about one hour.
7. After simmering, turn off the heat, stir the mixture and let the dye cool.
8. Pour the dye mixture through a mesh sieve into the plastic tray. A clean litter tray is ideal for most paper sizes, but any large, shallow container will work. If the dye is too thick, add 1/4 cup water.
9. Slide a piece of white paper into the tray. Try to use heavy papers or card stock for dyeing, as the moisture may cause more delicate papers, like tissue or rice paper, to fall apart. Make sure the dye covers the paper completely. Wait 5 to 10 minutes for a light tone to your paper. Wait overnight for a richer shade.

**OPTION C: PRINT MAKING**

Cut into the beet root to create fun shapes for stamping.

**Directions:** Slice beets in half and use them as stamps on paper. Experiment with cutting different shapes into the beet with a paring knife. Have an adult use the knives if running this activity with younger kids.
**READ:** *Tops and Bottoms* by Janet Stevens: This beautifully illustrated book tells the story of a hard working rabbit family and a lazy bear. While the bear sleeps all summer, the rabbits work hard to grow a garden. As part of the agreement, they let the bear chose whether he wants the tops or bottoms of the plants. This story is a great way to introduce the differences between plant parts, tops, and bottoms.

**DISCUSS:** Hold a discussion on plant parts as they pertain to beets. What part of the plant are we eating when we eat beets? Trick question, because we can eat the tops AND the bottoms (leaves and roots)! What is the job of the root of a plant? What is the job of the leaves? What function or purpose do they serve for the health of the whole plant?
Make a Rainbow Confetti Salad with shredded beets, carrots, and cabbage!

**YIELD:** 4-6 servings

**INGREDIENTS**
- 2 beets
- 2 carrots
- 1 cup shredded cabbage

**DRESSING INGREDIENTS**
- 6 Tbsp. olive oil
- 2 Tbsp. cider vinegar
- 2 tsp. honey
- 1 tsp. fresh grated ginger or 1/3 tsp. dried ginger
- 1 tsp. dijon mustard
- 1/2 tsp. garlic, minced
- Salt and pepper, to taste

**DIRECTIONS:**
1. Clean and grate vegetables, keeping the beets separate. No need to peel, just scrub your vegetables well! To save time, you can shred vegetables with a food processor.
2. Mix together dressing ingredients.
3. Add dressing to vegetables, mixing in beets last.
4. Let sit for one hour before serving.
ACTIVITY #5 (30 MINUTES)

SPROUT A BEET TOP

Watch how beet leaves sprout from the top of the beetroot in different substrates.

Supplies needed:
- Beets
- Bowls or saucers
- Sand
- Soil
- Water
- Knife
- Handout for tracking growth in various conditions

Directions:
1. Trim off the beet greens. Cut off the top of the beet leaving about a ½ inch of the beet root.
2. Prepare three bowls with the following substrates: sand, soil, and water. The sand and soil should each be ~½ inch deep and the water ~¼ inch deep.
3. Press a beet (root facing down) into each of the three bowls.
4. Place the bowls in a window with good light. In time, leaves will begin to sprout from the tops of the beets.
5. Have students observe the growth of the leaves over time. Replace the water as needed.
**ACTIVITY #6 (30 MINUTES) ALL GRADES**

**BEET POETRY: DROP THE BEET**

Crowdsourcing vocabulary to create performative poetry.

**Directions:** Break students into groups of three or four. Have students write down descriptive adjectives or nouns to describe the color, texture, and taste of the beet they are tasting. The students should then use these words to come up with a short performative poem or rap. Have the students share their poem/rap with the class!
ACKNOWLEDGMENTS
The following people contributed to this lesson plan: Alida Farrell, Maisie Anrod, Maire Folan, Esmé Forbes, and Emma Richmond-Boudewyns.

APPENDIX SEE WORKSHEETS BELOW
BEET ART ((for activity #2)

PAINTING WITH

BEETS