PLANT A SALAD GARDEN

Module 1: Plant lettuce and radishes. **SCIENCE 5.5.B**

Procedure:

1. Begin with a project that gets students thinking about where their food comes from. Tell students that they will trace their breakfast. Have students list what they ate for breakfast. Then for each food, have them tell where the food and its ingredients came from. For example, a muffin has wheat from Midwest farmers, blueberries from a NJ blueberry farm, butter from a dairy farmer, and eggs from a chicken farm. Encourage students to go beyond the grocery store as they trace the origin of the foods they eat.
2. Visit the garden as soon as the soil is thawed enough to work. Have students use their trowels to loosen the soil. Observe bugs, worms, and other soil creatures.
3. Show students a lettuce start. Have them identify the plant parts. Compare various types of lettuce. Show students how to plant a lettuce start in a shallow hole then to back fill the hole gently with soil making sure that the entire root ball is planted beneath the soil. Caution students to take care not to break off the leaves.
4. Finally, show students how to make a furrow with their trowel by making a small, straight indentation in the soil. Show them how to sprinkle radish seeds in the furrow separated by an inch or two. Tell students that each radish seed will get as fat as a small rubber ball. Have them leave enough space for the radishes to mature. Radishes are resilient and will choke out their too-close brothers, so don't sweat this too much.
5. Water the plants gently with watering cans. Wash hands carefully after the project. Explain that organisms live in the soil that are not good for humans, so washing carefully will keep them from ingesting harmful bacteria.

SAMPLE

PORTFOLIO-BASED ASSESSMENT *Students write in their garden portfolio.*

Write a step-by-step essay of how to plant lettuce and radish plants. Include pictures.

Early March

MEETING TIME:

20-30 minutes

OBJECTIVES

To understand where food comes from

To learn several planting techniques

SUPPLIES

A flat of lettuce starts in several varieties

A packet or two of radish seeds

Gardening gloves

Gardening trowels to loosen the soil

VOCABULARY

Starts

Plugs

Furrow

PROBLEM-BASED LEARNING QUESTIONS

What did you eat for breakfast?

Where did the foods come from?

Where were they before they got to the grocery store?

What ingredients went into the food in your breakfast?

How far do you think the ingredients travelled before you got it?

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TEND THE SALAD GARDEN

Module 2: Students water and measure the lettuce and radishes.

Procedure:

1. After the lettuce and radishes have been in the soil for 2 weeks, visit the garden to monitor the progress. Discuss the reasons to plant food and to choose local food to eat. (*Buying local food helps farmers in our state and community and helps protect farmland from sprawl.*) Tell students how local food is different than food from the grocery store. (*Local food is grown for taste, not for shelf-life. Local food from small farms is GMO free.*) Have them discuss the impact of local food on the climate.

2. Water the plants gently with watering pails. Allow each student to use a watering pail to sprinkle water over the leaves and around the soil at the base of each plant. Avoid heavy splashes on the small radishes which would cause damage.

3. Use rulers to measure how tall the lettuces have grown. Look for changes in them, such as more leaves growing from the middle of the plant, insect damage on the outside leaves, soil splashes, etc.

4. Look carefully for radish sprouts. Have students draw pictures of them at life size. Pull one or more radishes out of the ground to find the seed from which it sprouted. Review the elements of a seed for any plant. Seeds have a tiny plant embryo, the germ. They also have a starchy food for the germ to eat as it begins to sprout. The covering of the seed is hard, but it gets softer when it is warm and wet.

PORTFOLIO-BASED ASSESSMENT *Students write in their garden portfolio.*

What changes do you notice in the garden? Tell what caused the changes. What prediction can you make about the salad garden?

Early March

MEETING TIME:

20-30 minutes

OBJECTIVES

To understand the impact of local food
To observe growth of lettuce and radish seeds

SUPPLIES

Watering cans
Rulers
Paper and pencil to record observations

VOCABULARY

Embryo
Germ
Germination

PROBLEM-BASED LEARNING QUESTIONS

How did we plant the salad garden?
Does the garden look like you thought it would look?
What kind of weather have we had that would help or harm the garden?
What do the seeds and starts need to grow?
What do humans do to help or harm the plants around us?

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HARVEST THE SALAD GARDEN

Module 3: Students harvest the lettuce and radishes. They eat a salad.

Procedure:

1. After the lettuces have grown for 4-6 weeks, take a large bowl to the garden and pull several full heads of lettuce from the soil. Show students the roots, the leaves, and any animals that inhabit the soil. Point out damage to leaves from insects.
2. Bring the lettuce inside and wash it thoroughly. If possible, have several large bowls of water. Have some students pull the leaves from the head of lettuce. Have others wash it in the water. Have others do a second rinse. Still others tear it into bite-sized pieces.
3. Radishes: Pull a bunch of radish plants from the soil. Brush off most of the soil. Have students compare how the roots of the lettuce and the radish are different. Wash radishes well and cut off the radish tops. Have students slice the radishes into disks.
4. Distribute small bowls for the lettuce. Drop a dollop of ranch dressing in each bowl and a handful of lettuce and cut radishes. Discuss the flavors and invite students to write what they think of the snack in their portfolios.
5. After eating, make a flow chart that traces conventionally grown food from the farm to the plate: farm—processor—packager—distributor—grocery—transport home—kitchen table. Have students compare the flow chart of commercial food to that of their garden food.

PORTFOLIO-BASED ASSESSMENT *Students write in their garden portfolio.*

Have students explain where the food in their salad comes from. Have them trace the path the salad took to get to the classroom.

Encourage students to think about all the trucking and processing that goes into the food they eat every day.

Early March

MEETING TIME:

20-30 minutes

OBJECTIVES

To understand how to harvest a crop
To enjoy fresh healthy food from a garden

SUPPLIES

Two large bowls
Salad dressing
Paper plates for students
Forks
Sink or area to wash the lettuce

VOCABULARY

Soil-borne bacteria
Harvest
Sharp, as flavor of radish

PROBLEM-BASED LEARNING QUESTIONS

How are the lettuce plants different from each other?
How are they different from the radishes?
What part of the plant do you eat for lettuce? For radishes?
If we were lettuce farmers, what would we do with our harvest?

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SALAD GARDEN EXTENSIONS

Cross Curricular Connections

LA: Before the salad party, have students write a class invitation to the principal inviting him or her to join the party. Have students make suggestions about how an invitation should look and sound. LA 3.2.B

SS: In the explanation of what the plants need to grow, have students speculate about what is in our environment that allows the radishes and lettuce to grow (cool springtime and not too hot sunshine). Tell students that these plants do not grow every place or at every time of the year. Discuss how different parts of the world have a different climate and are not able to grow the same things we can grow. SS 6.6.E

MATH: Measure the distance between the lettuces at planting. Estimate the number of weeks it will take to grow. Then begin a growth chart to measure how much the lettuces grow. MATH 4.2.D; 4.1.C

SCIENCE: Have students look at the veins in the lettuce leaves. Explain that the veins carry the water and minerals from the soil to give the food the energy and supplies it needs to grow its own food. Review the parts of a plant and identify the lettuce as leaves and the radish as a root. Cut a lettuce head in half to look at the short stubby stem that holds the leaves onto the plant. Compare it to the stems of other plants, such as trees or tomato plants. SCIENCE 5.5.B

HEALTH/PE: Use the project to help students understand the reasons that salad is a good thing to eat. Make a list including the benefits to our bodies (lots of minerals and vitamins), our minds (keeps us sharp), and our stomachs (high fiber keeps digestion rapid). PE 2.1.C

TECH: Explain to students that the method they have created with each team washing the lettuce one after another is like a lettuce washing machine that commercial growers use to clean the lettuce. The leaves pass from one station to the next getting cleaner each time. TECH 8.2.C

LIFE SKILLS: Explain that soil has many organisms that can make people sick. Show students how to wash their hands carefully with sudsy water. Explain to students why it is important to wash off any chemicals or dirt that is left on the food from farm. Make sure students understand that even organic foods need to be washed to make sure they are free of dirt and germs. CFLS 9.F.1

GARDEN RESOURCES

Fiction

Atwood, Margaret - Rude Ramsey and the Roaring Radishes - Bloomsbury - 2004 - grades 1-3
An adventure story told mainly with words that begin with the letter R.

Non-Fiction

Fowler, Allan - Taking Root (Rookie Read-About Science) – Children's Press – 2000 – grades K-3
(Also available through Scholastic.)

Schwartz, David - Plant, Stems and Roots - Gareth Stevens - 2000
Highlights stems and roots, the essential plant parts that give us radishes, peas, corn.

SAMPLE

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