



Upper Valley Farm to School Network Community Curriculum Pilot Project April 2012 – Seedy Mystery Snack

Overview: This lesson involves dressing up a student as a seed, dissecting lima beans and a mysterious seedy snack (granola), and a sequencing activity where students determine how the seedy snack was made.

Standards Addressed:

VT Standard 7.13: The Living World: Organisms, Evolution, and Interdependence: Students understand differences among living organisms, understand the role of evolution, and recognize the interdependence of all systems that support life. This is evident when students:

- a. Identify characteristics of organisms (e.g., needs, environments that meet them; structures, especially senses; variation and behaviors, inherited and learned)

VT Standard 7.16: Design and Technology: Natural Resources: Students understand how natural resources are extracted, distributed, processed, and disposed of. This is evident when students:

- a. Identify natural and agricultural resources and where they came from (e.g., wildlife, fish, plant, rock, water, soil, minerals, sunlight and air), and distinguish between natural resources and things made by humans (e.g., sand vs. cement, milk vs. ice cream, wheat vs. bread, sap vs. syrup, wildlife vs. domesticated animals)

VT Standard 1.10: Procedures: In written procedures, students relate a series of steps that a reader can follow. This is evident when students:

- a. Organize the steps of procedures clearly and logically
- b. Use words, phrases and sentences to establish clear transitions between steps

Common Core State Standard for English Language Arts & Literacy in History/Social Sciences, Science and Technical Subjects: Writing Standard: Research to Build and Present Knowledge:

7. Participate in shared research and writing projects (e.g. explore a number of “how-to” books on a given topic and use them to write a sequence of instructions).
8. With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question.

Focusing Question:

Why and how do we eat seeds?

Preparation:

Be prepared to spend about 45 minutes making granola and gathering materials.

Granola recipe:

Ingredients

¼ c maple syrup

¼ c honey

2 T butter

3 c oats

½ c pumpkin seeds

½ c sunflower seeds

½ c dried fruit (raisins, cranberries, apricots)

½ c wheat germ

1 tsp salt

Directions

1. Preheat oven to 325.
2. Toast seeds (oats, sunflower seeds, pumpkin seeds and wheat germ) in the oven for 15 min.
3. Melt butter, maple syrup and honey in a saucepan on the stovetop.
4. Combine all ingredients in a large bowl.
5. Grease a cookie sheet or baking pan and spread mixture evenly on it.
6. Bake for 25-30 min.
7. When cool, cut into bars or break into small clusters.

Materials:

For “Little Sprout” activity:

Labels for each part/prop: seed coat, cotyledons, root, embryo (put this one on a string for student to wear as a necklace/name tag)

Tape to affix labels

Rain jacket (seed coat)

Backpack

Granola for dissection (endosperm)

Water bottle

Straw (root)

Hat (cotyledons)

A pre-soaked bean for every student

Magnifying glasses

Large diagram of seed parts for students to reference

For seedy mystery snack:

Granola
Paper plates or paper towels
Chopsticks or toothpicks for moving granola around (optional)
Examples of ingredients in granola (optional)
Sets of clues for each group of 3-5 students (photographs or objects)
Paper for students to record the procedure on
Copies of the recipe for students to take home

Procedure:

Introduction (1 min): Introduce yourself. “Today we’ll be learning about seeds! First I need a brave volunteer to turn into a seed.”

“Little Sprout” activity (10 min): See write-up from Shelburne Farms’ Project Seasons, appendix 1. For the high-energy snack that represents the endosperm, put the granola (aka seedy mystery snack) in the sprout’s backpack instead of trail mix.

Mystery snack dissection (10 min): “Now we’re going to be detectives and figure out how we got from whole ingredients to this high-energy mystery snack that we found in the seed’s backpack. A detective is like a scientist, and we will use observation skills to dissect the mystery snack. I will give you each a sample of the snack. How many parts can you find? Use all your senses, but save taste for last so that you have time to write and draw observations.”

While they observe, older children may write down their words to describe what they find, while younger kids may spend some time dissecting, observing and tasting, to report back to the teacher to write on the board.

After kids have spent time with the snack, and reported back, you may guide them to realize what the most common kind of ingredient is: SEEDS. What is the seeds job for the plant? Answer- the seed has energy to grow into a plant, and seeds give us energy too.

Mystery snack investigation (15 min): Take out envelopes with photos/objects representing the steps it takes to make the granola. “It looks like we have some more clues about how we got from a whole food to a yummy snack, but we still need to use our detective skills to find out how this seedy snack was made.” Inside you will find photos, illustrating the steps, or objects representing the steps, and in small groups, the students will sort them, trying to figure out the proper order. Discuss the steps and their order as a class.

Procedural writing (10 min): After we have come up with the order as a group, children will work alone in blank journals, to write the steps in sequence, or to draw the steps, writing key words.

Conclusion (4 min): Children will join up with the group again, and some may volunteer to share their written steps, you can reveal and pass out the actual recipe, and see how their answers match up.

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The “Little Sprout” activity is from pages 211-12 of Shelburne Farms Project Seasons: Hands-On Activities for Discovering the Wonders of the World by Deborah Parrella, published by Shelburne Farms in 1995.

Appendices:

- “Little Sprout” activity from Project Seasons
- Granola recipe to send home with students
- Photos representing steps to make granola