South Dakota State University Extension

Level: PreK-K

GROW GETTERS

SUPER SEEDS

Overview: In this lesson, youth will explore the many types of seeds that are eaten or grown and learn how they grow.

Contributors: Activities written by Cindy Burris, Marlys Hauck-Fenner, and Morgan Swick under the direction and review of Kristine Lang, Ph.D. and Anna Tvedt.

The lesson was reviewed by Audrey Rider.

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Activities in this Lesson:

- **Science Activity:** Sunny Seed Germination
- **Nutrition Activity:** Chia Pudding
- **Physical Activity:** Yoga: From Seed to Plant

SD Early Learning Guidelines and Kindergarten Content Standards

- **Health:**
  - **7.2.1:** Demonstrate healthy practices and behaviors to maintain or improve personal health.
  - **7.2.2:** Demonstrate behaviors avoid or reduce health risks.
- **Physical Education:**
  - **Standard 3 Nutrition:** Recognizes that food provides energy for physical activity.
- **Science:**
  - **K-LS1-1:** Describe patterns of what plants and animals, including humans, need to survive.

Book:

Books may be available at school or community libraries.

The Tiny Seed by Eric Carle

This book follows the adventures of tiny seed through the seasons and the lifecycle of a flower.

- Purchase the book: The Tiny Seed
- Watch: "The Tiny Seed" Read aloud by Buddy Son Storytime
- Consider these follow-up questions:
  - What do seeds need to grow? Soil, sunshine, water,
  - What part of the plant grows underground? Above ground? Roots underground, stems, leaves, and flowers above ground.
  - What time of year do plants start flowering and budding? Spring
  - What are some ways seeds move from place to place? Wind. Other examples may include people or animals.

SUNNY SEED GERMINATION

Science Activity
PreK-Kindergarten

In this activity, students will learn about germination and the parts of a seed by sprouting their own plant from a bean seed.

Time:

Prep: Overnight
Activity: 15-20 minutes

Materials

- Bean seeds or other seeds
- 1 plastic baggie per student
- 1 paper towel per student
- Water
- Tape

Instructions:

1. Soak the beans overnight and drain them.
2. Instruct students to write their name on a baggie.
3. Have the students wet a paper towel so that it is moist but not soaking wet. Fold the paper towel and place it inside the plastic baggie.
4. Have the students place a few seeds inside the baggie on one side of the paper towel. Be sure that the seeds are not sitting in any water but are in contact with the damp paper towel.
5. Press any air out of the baggie and seal it shut.
6. Tape the baggie to a window with the seeds facing inside.
7. Observe the changes as the seed sprouts.

Guiding Questions:

Before the Activity:

- Ask: What are the different parts of a seed and what do they do?
  - Answer: Embryo – baby plant that grows into the new plant, Seed Coat – outer covering that protects the seed, Endosperm – food for the baby plant
- Ask: What do seeds need to grow?
  - Answer: Sunlight, water, air

During the Activity:

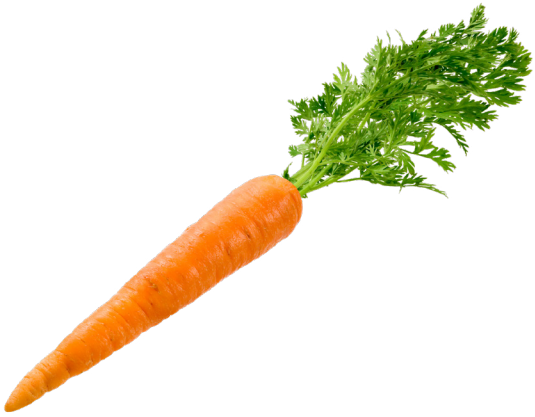
- Ask: What are some things that come from seeds?
  - Answer: Vegetables (ex. tomatoes, carrots, peppers); fruits (ex. apples, bananas, and strawberries); all plants come from seeds
- Ask: Why are plants important to us?
  - Answer: They provide food, they clean the air to keep us healthy, they provide shelter for animals, etc.

After the Activity:

- Ask: What do you think will happen to the seeds?
- Ask: How long do you think it will take for the seed to sprout?

Modification notes:

- **Extension:** Plant the seed in soil once it starts outgrowing the plastic baggie.
- **Extension:** Use the provided flashcards to show the students different types of seeds and the respective fruits and vegetables that grow from them.
- **Advanced:** Have the students record their observations each day in a notebook. Ways to record change could include writing a description, drawing a picture, and measuring the size of the seed with a ruler.
- **Advanced:** Place a second baggie of seeds in a dark room. Have the students compare the differences between the seeds in the sun and the seeds in the dark.



CHIA SEED PUDDING

Nutrition Activity
PreK-K Grades

In this activity, students will make chia seed pudding with choice of toppings.

Time:

Prep: 10-20 minutes – including shopping
Activity: 5-10 minutes + 2 hours for refrigeration

Materials

- 2 TBSP chia seeds per participant
- ½ cup almond milk, coconut milk, or other milk of choice per participant
- 1 tsp of honey, maple syrup, or other sweetener per participant
- Optional toppings: fruit such as berries or bananas, nuts, coconut flakes, cinnamon, granola, etc.
- Measuring cups and spoons
- Mason jars or other containers with lids
- Spoons

Instructions:

1. Help students to measure out and pour the chia seeds, milk, and sweetener into a jar or container and stir. Label their jars or containers with the students' names.
2. Let the mixture sit for 2-3 minutes and stir again.
3. Place the closed jar or container in the fridge for at least 2 hours or overnight.
4. Remove jar from fridge, stir, add toppings of choice, and enjoy!

Guiding Questions:

Before the Activity:

- Ask: What nutrition do seeds provide for our bodies? (How are they healthy for us?)
  - Answer: Protein, fiber, and healthy fats
- Ask: Why is fiber good for us?
  - Answer: Fiber helps with digestion and bowel movements (it keeps your tummy feeling good). It also helps with keeping away diseases, especially as we get older.

During the Activity:

- Ask: What do the chia seeds feel/look like?
- Ask: What are other ways we can eat chia seeds?
  - Answer: Oatmeal, yogurt, smoothies, protein bites, salads

After the Activity:

- Ask: How did the chia seeds change? What do they feel/look like now?
- Ask: What are examples of other seeds we can eat?
  - Flaxseeds, pumpkin seeds, hemp seeds, beans, nuts such as cashews and almonds

Modification Notes

- **Extension:** Brainstorm with students and/or find more recipes using seeds to send home with students to make with their parents or guardians. Think about other flavors of chia seed pudding they could make. Talk about “seedy” toppings that could be added, such as fruits with seeds, vanilla (from vanilla beans), nut butters, or nuts.

YOGA: FROM SEED TO PLANT

Physical Activity
PreK-3rd Grades

In this activity, students will complete a series of yoga stretches that represent the germination process from seed to a plant.

Time:

Prep: 10 minutes
Activity: 15-20 minutes

Materials

- Mats (optional)

Instructions

Teacher tip: See the yoga pose images for reference.

1. Stand in front of the group of students and have them spread out to find their own spot. Tell them to be at least an arm's length away from each other.
2. Start by reviewing the process of a seed growing into a plant with the students.
3. Explain to them that they will be doing stretches and to think about how the stretches represent the plant growth process. Ask the students what they think happens next in the plant growth process as you complete the stretches and discuss what is happening.
4. Have everyone sit crisscross-applesauce with their hands resting on their knees. This is called the Easy Pose. Have them take deep breaths in and out as they focus on relaxing for about 30 seconds to 1 minute. Explain that this pose represents the seed, and it is taking in water until it cracks open.
5. Have the students transition into the Child's Pose. Tell them to reach with their arms and wiggle their fingers. Describe this as the roots developing and searching for water. Hold for 30 seconds to 1 minute, focusing on deep breathing.
6. Transition into Downward Dog. Have the students pedal their feet. Do this stretch for 30 seconds to 1 minute. This stage can be described as the seed breaking open more and the shoot beginning to develop.
7. Stand up a little more into the Rag Doll Pose. Hold for 30 seconds to 1 minute. You can describe this stretch as the shoot growing a little more.
8. Move into Warrior 1 Pose. Hold for 30 seconds to 1 minute. This stretch can be described as the shoot rising above ground, and the roots growing further.
9. Next, transition into Warrior 2 Pose. Hold for 30 seconds to 1 minute. This pose can be described as the first leaves developing.
10. Do the Tree Pose. Hold for 30 seconds to 1 minute. This pose can be described as a mature plant that has both leaves (leg position) and a flower (arms position).
11. Next, have the students start moving their arms slowly back and forth in the air as if they are blowing in the wind. Do this for about 30 seconds. Then have the students twirl and move about the room/location as if they are seeds being spread in the wind.
12. Have the students find a new location and get into the Savasana Pose. Describe this position as the seed resting over winter. Stay resting for 30 seconds to 1 minute.

13. If desired, repeat the process as if the students are new seeds that spread to a new location and are ready to grow in the next year.

Guiding Questions:

Before the Activity:

- Ask: What is the name of the process of a plant growing?
  - Answer: Germination
- Ask: What are some steps in the germination process?
  - Answer: Seed swelling with water, roots developing, shoot sprouting upward, first leaves developing

During the Activity:

- Ask: What do you think this pose represents/what step is next? (Ask for each step)

After the Activity:

- Ask: What will happen once the new seed travels somewhere else?
  - Answer: If conditions are right, it will become a new plant and start the cycle over again.

Modifications

- **Extension:** Discuss the importance of staying active to be healthy. In this discussion, include the topic of being active outside and its benefits (fresh air, sunlight, decreased stress).

Easy Pose

Child's Pose

Downward Dog

Ragdoll Pose

Warrior 1

Warrior 2

Tree Pose

Savasana Pose

Additional Resources

If you liked this lesson, you may also like these other educational materials from SDSU Extension.

Nutrition and Physical Activity

- Pick it! Try it! Like it! Preserve it! materials are filled with tips for selecting, preparing, and preserving a wide variety of fruits and vegetables. Colorful fact sheets, recipe cards, and educational videos provide educators and families with fun, engaging tools to enhance any dietary curriculum!
- Growing Active Readers is a series of book-based lessons to help young children understand the benefits of making healthy decisions involving nutrition and physical activity.
- South Dakota Farm to School Resource Guide walks through the basics of starting farm to school programs in South Dakota, including local food selling/purchasing, school gardens, and in-class education.
- Preservation this page provides a suite of educational materials and programs offered by SDSU Extension related to food preservation.
- Physical Activity View all SDSU Extension physical activity content.

Horticulture

- Garden and Yard this page provides easy access to all the educational materials and programs related to garden and yard by SDSU Extension. This frequently updated landing page includes sections for fruits, vegetables, problems and solutions, master gardener volunteer program, garden hour, and more.
- Vegetable Gardening in South Dakota this booklet will help you with basic vegetable gardening information and tips to get started.
- Fertilizing Gardens in South Dakota this booklet by SDSU Extension provides information on soil testing, types of fertilizers, and methods of application.
- An Identification Guide to Native Pollinator Plants of South Dakota for Managed Landscapes In this guide, learn about the perennial plants native to South Dakota that attract pollinators and can be incorporated in to gardens.
- Tree Pest Alert stay updated and informed with this weekly resource for selecting, planting, and caring for trees and shrubs all year round.