Grade: Kindergarten

Program Title: Seed needs and how they move.

Related Iowa Core Performance Expectations:

K-LS1-1. Use observations to describe patterns of what plants and animals (including humans) need to survive. [Clarification Statement: Examples of patterns could include that animals need to take in food but plants do not; the different kinds of food needed by different types of animals; the requirement of plants to have light; and, that all living things need water.]

K-ESS3-1. Use a model to represent the relationship between the needs of different plants and animals (including humans) and the places they live. [Clarification Statement: Examples of relationships could include that deer eat buds and leaves, therefore, they usually live in forested areas; and, grasses need sunlight so they often grow in meadows. Plants, animals, and their surroundings make up a system.]

Future Considerations: Blend this program with the unit storyline developed by the classroom teacher.

Program Alignment with the Iowa Core Science Standards:

Disciplinary Core Ideas (DCIs)	Investigative Question	Investigative Phenomena	**Practices (SEPs) Students will:**	**Cross Cutting Concepts (CCCs) Students will identify:**
LS1.C: Plants need water and light to live and grow. **ESS3.A:** Living things need water, air, and resources from the land, and they live in places that have the things they need.	What do seeds need to grow? How do seeds get to a spot where they can grow?	 	• **Obtain, evaluate, and communicate information** about seeds. • **Ask questions** based on their observations of plants and seeds. • With guidance, **conduct an investigation** in collaboration with peers • **Engage in arguments with evidence** to support claims about what seeds need to grow and how seeds travel.	• **Patterns** when they notice where seeds grow. • How the **structures** of seeds are related to how they **function** (travel)

Program components: The presenter will have students use the CCCs, the SEPs, and the phenomena to figure out how to answer the investigative question and to grasp the disciplinary core ideas.

1 - What do plants need to grow? How do seeds move to a place where they can grow? Have the students turn to a neighbor to discuss this before sharing with the whole group.

2 - Seed Sort Place students in small groups and give each group of bucket of seeds to observe, touch and sort. Have the students figure out how to sort the seeds. Afterward each group should explain how they sorted their seeds to the whole class. Now have the students think about all the ways these seeds can travel. Students will re-sort their seeds based on dispersal. Again have students explain how they sorted their seeds to the whole class. Teacher or naturalist can record their sorting techniques on the board.

3 - Maple Seed Mix-Up (from *Ranger Rick's NatureScope: Trees are Terrific!*) Object of the game is for the "maple seeds" to "land" in a place that's free from hazards and has the conditions maple seeds need in order to grow and sprout. This activity demonstrates how difficult it is to get a seed to grow, and why one plant makes so many thousands of seeds. Incorporate math by having students keep track of how many seeds grow. Record results on the board and discuss

4 - What do plants need to grow? How do seeds move to a place where they can grow? End by repeating your investigative question.

Additional Resources:

Videos:

https://www.youtube.com/watch?v=3CCOWHa-qfc

https://www.youtube.com/watch?v=6hcjxaBz8mw