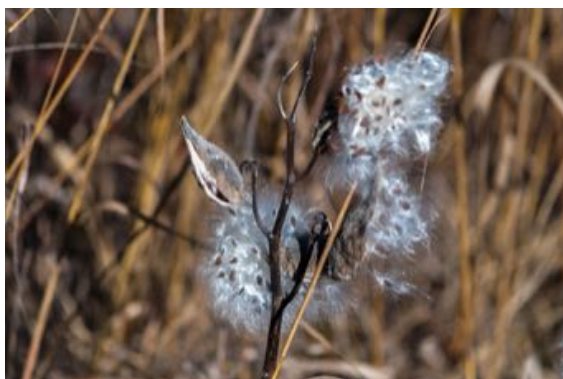


Seeds that fly

Grades 3 to 5, ages 8 to 11. One 50-minute session.

A milkweed seed under its parachute of floss is an engineering solution. Students test the real thing, then design and race their own.



Shadowmeld Photography. CC BY-SA 4.0. Wikimedia Commons.

What students will be able to do

- Explain why being carried on the wind is useful to a plant that cannot move.
- Design a fair test, controlling drop height and measuring fall time.
- Iterate a design based on results.

Materials

- Milkweed seed with floss attached, or photographs and video if you have none
- Tissue paper, thread, paper clips, tape, scissors
- Stopwatches and a measuring tape
- A fan, if you have one

How it runs

1. Drop a real milkweed seed from head height and time it. Then drop one with the floss pulled off. Time that too.
2. Ask what the floss is doing, and what it costs the plant to make it.
3. Challenge: build a parachute that carries one paper clip and stays in the air as long as possible from a fixed height.
4. Agree the fair-test rules as a class before anyone builds: same height, same payload, three drops each, take the average.
5. Test, record, redesign once, test again. The second round is where the learning happens.
6. Finish with the fan on, to see whose design travels furthest rather than falls slowest. They are different problems.

Discussion questions

- Why does a plant want its seeds to land far away rather than nearby?

- One milkweed pod holds around 200 seeds. Almost none of them become plants. Why make so many?
- Aquatic milkweed is the only species with no floss at all. It grows in swamps. What might it use instead?

Taking it further

Collect and clean real seed in the fall using the paper bag and coins method, then sow it outdoors in November.

Safety

Scissors. Do not let children inhale loose floss.

NGSS alignment

Code	Performance expectation
2-LS2-2	Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
3-5-ETS1-3	Plan and carry out fair tests in which variables are controlled and failure points are considered.

<https://milkweedusa.com/learn/seeds-that-fly/>