

Casting Seeds to the Wind

A way for plants can get around, a feat without feet



Plants have developed many ways to spread their seeds. Some methods involve moving through the air and using the wind to move seeds farther away. Some seeds have a fuzzy top or a “wing-like” attachment. Each feature can slow the seed’s fall to the ground and move the seed sideways. A longer time to reach the ground means any wind present has more time to carry the seed farther.

Activity Challenge

What can be attached to a seed to increase the time spent in the air?
What attachment will cause a seed to travel the farthest?

Preparation

1. Select a workspace and a drop zone inside and outside the home.
2. Collect suitable materials and tools from the Materials Needed list. The recycle bin can be a good source of paper.
3. Create data tables, like the sample tables on the next page, to record the time and distance measurements.

To Do

1. Think about design features that could slow down a falling seed and features that could catch a “ride” on the wind. Draw possible designs.
2. Select one design and the material to use. Make and attach the design to a make-believe seed (a small paper clip, peppercorn, or a bit of clay).
3. Create a name for the design (the **prototype**) or give it a number.
4. Hold the prototype at about nose height, drop it and start the timer.
5. Stop the timer when the seed lands on the floor or ground.
6. Record the time interval, from drop to landing, in the table created in preparation step 3.
7. Measure the distance along the floor from the landing spot to the **drop point** (the spot directly below where the prototype was released).
8. Record the distance in the table on the next page or your own.
9. Repeat step 4 to 8 at least 4 times. Note if the design spins or glides.
10. Create a new prototype by changing a feature or material of the original prototype or use a completely different design.
11. Repeat steps 2 to 8 for four or more prototypes.
12. For each prototype, calculate the average drop time and the average floor/ground distance from the drop point.
13. If no timer or ruler is available, then drop two prototype versions and see which one lands last and/or lands the farthest away from the drop point.

Materials Needed

- Paper
- Drawing materials
- Thin cardboard
- Paperclips, pepper corns or bits of clay
- Toothpicks
- Cotton balls or equal
- Scissors
- Stopwatch or timer app
- Tape measure or ruler
- Glue (optional)
- Fan (optional)

Grade Range

3-5

6-8

Topics/Skills

Science: Plant propagation, Structure and Function, Adaptations, Biodiversity

Learning Standards

NGSS: [Life Science](#)

Duration

20 to 45 minutes

Prep Time

10 to 15 minutes

Observations

- What was the average fall time and distance from the drop point for each prototype?
- Which features or material worked best at slowing the fall?
- Which features or material worked best at moving the seed away from the drop point?
- How does, or can, spinning slow the rate of fall?

Extensions

- Test the prototypes seed attachments outside on a mildly windy day or indoors with a fan set to a low speed.
- Collect plant and tree seeds and look for features that might help them to be carried away by the wind.

The Science behind the Activity

Plants make seeds in order to create new plants. It is usually best if these new plants grow somewhere away from the “mother” plant. A wider distribution for the seeds will reduce the local competition for the resources of soil, moisture and sunlight that the seed needs to germinate and the plant to grow. Being spread around the seeds might land in an area away from the mother plant that is richer in one or more of the essential resources favorable for plant growth. This can increase the chances for species survival which is the main reason for seed production in plants.

Prototype (name or number)	Time – drop 1	Time – drop 2	Time – drop 3	Time – drop 4	Average time

Prototype (name or number)	Distance – drop 1	Distance – drop 2	Distance – drop 3	Distance – drop 4	Average distance