Seed Dispersal

Grades 5-8

Big Ideas: Interdependence, Limits

Fall is the perfect time to look at cycles as plants and animals prepare for winter. As educators we can foster a connection between our students and the natural world. When students recognize their connection to nature this creates a context for understanding how a place, organisms, and systems depend on one another. This leads to a deep understanding of interdependence and supports global decision making in the future.

Activity Description:

Seed dispersal methods increase the chances that a seed will fall where there are enough resources for it to grow. In this activity, students will look at the various ways plants disperse seeds. Then students will design a seed that is able to be dispersed by the wind.

Students will be able to...

- Identify the different methods of seed dispersal.
- Explain how plants adapt to their environment by dispersing their seeds in various methods.

Essential Questions:

- What happens when a system reaches its limits?
- Why adapt?

You will need:

- A variety of seeds that disperse in different ways (if you plan to collect seeds with your class allow an extra class period)
- Student lab notebook
- Hand lenses
- Small dry Seeds (bean, watermelon or pumpkin)
- Fan
- Meter Stick
- Tape
- Glue
- Paper
- Scissors
- Feathers

- Variety of Seeds
- Hand Lens

Time:

2-45 minutes class periods

Before the Activity:

1) Review the concept of seed dispersal…
    a) What are the advantages of seed dispersal?
    b) What are the disadvantages?
    c) What are the methods of seed dispersal?
2) Discuss how a seed's design could be related to its function.

Before you begin:

Set up lab stations. Each station contains

1) A variety of seeds that disperse in many different ways.
2) A hand lens

Activity Instructions:

1) At their station, students should
    a) describe each seeds' characteristics
    b) sketch the seeds
    c) label the seed parts
    d) Predict how the seeds are dispersed
    e) list conditions in the habitat that affected seed dispersal.
2) Students take a small seed (non-wind dispersed) and design a wind dispersal mechanism for the seed. *Students can either choose their materials or the same materials can be supplied for their seed design: feathers or paper, tape or glue.*
3) Students drop their seed designs from the same height, in front of a room fan.
    a) Measure the distance their seed traveled.
    b) Record the distance traveled in your science notebook.
    c) Repeat at least 2 more times
    d) calculate the average distance.

Debrief and Reflection Questions:

Here are some sample questions to consider when engaging your class in the debrief discussion after they have completed the activity.

- Based on your class calculations, which seed design traveled the farthest?

- How would you change your seed dispersal design?
- Why don't seeds all have the same dispersal method?
- What factors determine how far a seed travels?

Variations and Extensions:

- Repeat the wind dispersal design experiment with design modifications.
- Display the seed designs in the classroom
- Seed Exchange: Set up a seed exchange at your school or local library.
    - check out the seeds like a library book
    - grow the plants in their home or school gardens,
    - collect the seeds
    - return them to the library.

This activity was adapted from
"Scattering Seeds," Discovery Education, Discovery Communications LLC.
http://www.discoveryeducation.com/teachers/free-lesson-plans/scattering-seeds.cfm