Seed Dispersal

Purpose: Students will examine seeds and predict and test their means of dispersal. This lesson will help students learn about hypotheses and experiments, as well as understand the difference between observations and inferences, while learning about how plants colonized Hawaii and its offshore islets.

Required background: Students should be familiar with the parts of a plant and their functions. Students should also be aware of Hawaii's volcanic origin, and the fact that the islands of Hawaii were once barren lava.

Materials:
1. Wind-borne seeds (ohia, dandelions, cotton, etc.)
2. Seeds that float (naupaka, coconuts)
3. Seeds that stick to animals (the ones that stick to your dog…)
4. Seeds that are eaten (avocadoes, strawberry guava, lilikoi)
5. Small fan, or use wind
6. Towels or socks or stuffed animals
7. Bucket of water


Procedure:
1. Set up a display of the seeds, and number each seed species. Divide the seeds into sets that contain examples from each dispersal method. The number of sets will depend on your class size. Build enough sets so that your class can work in groups of 3-4 students.

2. With the class, review the function of seeds and go over the concept of dispersal by introducing the following "Questions of the Day."
- What are seeds for?
- Can you think of ways that seeds might move around?
  -define dispersal

3. Each group of students will examine a set of seeds. Students should think about the questions on the data sheet for each seed species. Each group will be required to write down answers for two different seeds species (at least one of these will be assigned to each group, to assure all seed types are examined). This will include recording a description of the seed (flat, winged, hairy, heavy, thorny, etc.) and a prediction of the way it travels from one place to another (wind, water, sticks, eaten, other).

4. Ask the students how they could find out which of these methods the seeds actually use. Have them conduct the tests they suggest. Some possible tests:

Does it float?
Does it blow in the wind?
Is it yummy?
Does it stick to clothes?

5. For those seeds that do not behave as predicted, students may try a second test.

6. The class will then reconvene to present their findings about their assigned seed. Have the class consider and discuss following questions for each seed: Do you think this seed could have dispersed to Hawaii by itself? How else may it have arrived?

Follow-up:
Discuss with students that what they did in this lab was formulate and test hypotheses. Then discuss the observations and inferences they made. Show the class a new seed, and have them try and infer its dispersal method. Use the discussion to define the following terms.

Vocabulary
Dispersal: movement of animals or plants to new areas
Observation: something you see with your own eyes
Hypothesis: an explanation you think might explain an observation
Experiment: a test that is done to see if a hypothesis is true or false
Inference: a conclusion made based on observations or facts you already know

Name_____

Seed Dispersal Data Sheet

SEED #

1. Describe or draw a picture of your seed.	2. How do you think this seed disperses?
	3. What parts of the seed made you think it disperses this way?
	4. How can you test if the seed disperses this way?
	5. What happened in your test?

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Seed Dispersal Homework

Vocabulary

Observation: something you see with your own eyes
Hypothesis: an explanation that you think might explain an observation
Experiment: a test that is done to see if a hypothesis is true or false
Inference: a conclusion based on observations or facts you already know
Dispersal: the movement of animals or plants to new areas

1. Write one observation you made about the seed you examined in class.

2. Based on this observation, what did you hypothesize about how your seed disperses?

3. What experiment did you do to test your hypothesis?

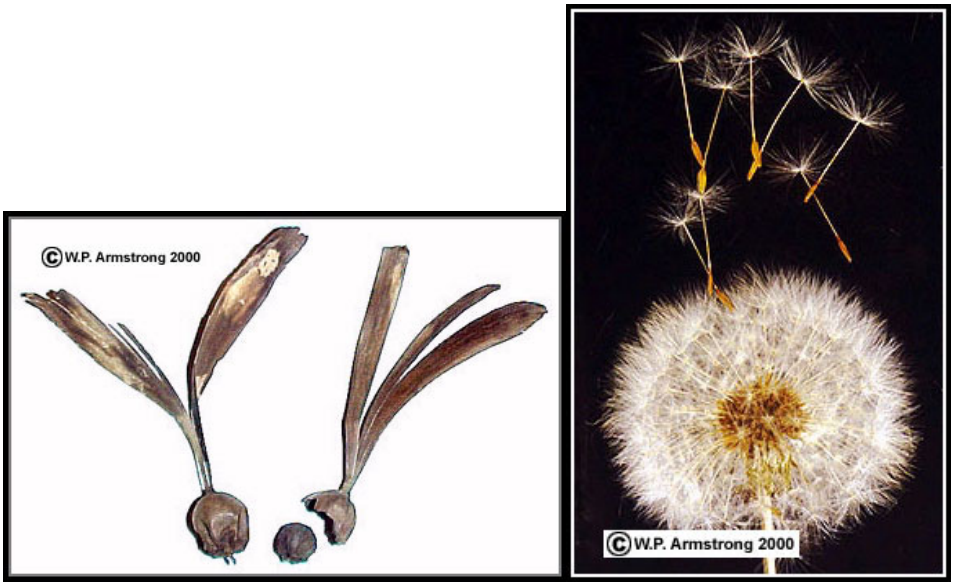
4. What happened in your experiment? What did you conclude?

5. Write two observations about the seed in the following picture.

6. Based on the observations you made, infer how this seed is most likely dispersed.

7. Write two observations about the seed in the following picture.

8. Based on the observations you made, infer how this seed is most likely dispersed.



Name_____