

# Growing Sneakers

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## **Standards of Learning**

Science 6.1, LS.1, LS 12

## **Objective**

Students will:

- Conduct an experiment using the scientific method
- Gain an understanding of how seeds travel with the aide of ecosystem dynamics and population influences

## **Materials**

- Tennis shoes
- 1 large bag of birdseed
- 1 bag of grass seed
- An area with loose soil
- A large bag of soil
- Small containers for potting
- Gallon sized plastic bags

Ahead of time lay out an area (preferably outdoors) with loosened soil, bird seed, and grass seed. Moisten the mixture to provide a tacky substance which will adhere to the tennis shoes.

## **Background Knowledge**

We know that seeds travel in a variety of ways. Examples are the fact that the wind carries seeds through the air and animals carry seeds on their fur or in animal waste. What affect do humans have on the distribution and possible growth of seeds in our ecosystem? Do people threaten or enhance the survival of the vegetation around us? Humans can both threaten and enhance the growth of seeds in our ecosystem. They can carry them on their clothes and shoes to other pieces of land to grow. However, they may also destroy vegetation by building shopping malls and tearing down land where vegetation could grow.

Imagine you are walking through a nature path, or hiking in the woods, even taking a walk on a farm. When you complete the walk you find all sorts of seeds attached to your clothing and shoes. What happens to these seeds?

## **Procedure**

1. Divide class into groups of 3 or 4.
2. Instruct students to bring a pair of tennis shoes on lab day. Have student observe the soles of their tennis shoes. Each group should select the pair which has the greatest potential to trap seeds. Each group should explain the basis of their team selection.
3. Discuss as a class the similarities and differences of how each group formed the hypothesis. Explain how hypothesis's should be written.
4. To test each groups hypothesis have the owner of the tennis shoes selected walk through a soil preparation.
5. Immediately upon exiting the test site the student should remove their tennis shoes and place them in a plastic bag to prevent from losing seeds.



6. In a lab setting remove the seeds and soil from the shoe. Count the number of seeds collected.
7. Conclude if the group hypothesis was confirmed regarding number of seeds trapped in a tennis shoe compared with other teams in the class.
8. Record results of experiment and draw conclusions.
9. Put the soil and seeds collected into the pottng container. Add additional soil to barely cover seeds. Mist with water.
10. Observe until seeds begin to sprout.
11. Discuss how walking through an environment can spread seeds. What affect does moving through the environment have on seeds? Include positive or harmful affects.

### **Extension**

- Use variables other than tennis shoes such as socks or gloves.
- Discuss where seeds land and travel other than the ground. (on the rug, sidewalk, in the car, in the laundry) Do these seeds survive? How far do they travel?
- Choose a more realistic environment such as a walk through the woods or a playground.

