

Heaps of Seeds

PRE-VISIT

LISTEN TO THE STORY

Play *The Dandelion Seed* written by Joseph Anthony and Chris Arbo, read by School Programs Instructor, Carmen Buchanan (7 mins. via unlisted YouTube link provided prior to visit).

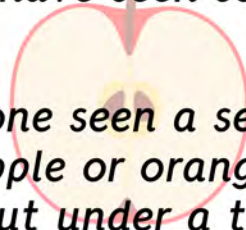
The story follows the path of a single dandelion seed from its parent plant, to a place where it can grow and flourish.



TALK ABOUT IT

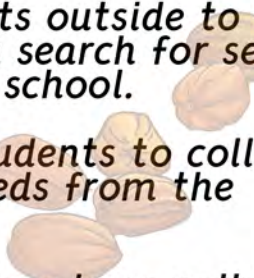
Discuss with students common places they have seen seeds. You might ask:

- Has anyone seen a seed inside a grape, apple or orange?
- How about under a tree or in the air like in *The Dandelion Story*?



SEEK AND SEARCH

- Invite students outside to their schoolyard in search for seeds found at the school.
- Encourage students to collect a variety of seeds from the schoolyard.
- Once seeds have been collected, return to the classroom to begin a closer look at the collected seeds.



DO SEEDS NEED LIGHT TO GROW?

- Allow students to make predictions if seeds need light to grow.
- Set up an experiment to test our hypotheses with seeds collected or any dry beans found at a grocery store.
- Start with two plastic cups. Place equal amounts of pre-moistened dirt in each cup. Label one cup "light" and the other cup "dark".
- Place one or two seeds in each cup, then place the "light" cup near a window and the "dark" cup in a box.
- After 3-5 days, check on the cups and compare seed growth.



POST-VISIT

Lima Bean Dissection

- Place a cupful of dried lima beans in water to soak overnight **the day before** the activity.
- Distribute 1 soaked bean to each student. **Prepare multiple spares** as some may fail to break apart cleanly while students handle them.
- Guide students through the process of disassembling the beans into their main parts.
- Instruct students to rub the lima bean between their thumb and fingers to loosen the seed coat from the underlying parts, then peel it away.
- Have students gently pull the two interior “halves” apart to note that these seeds have two **cotyledons**, or seed leaves that contain **food for the young plant**. Seeds in other groups may contain only one as an inherited feature.
- Ask students to locate/ identify a small wormlike piece attached to one of the cotyledons; in some cases this may have fallen away while separating the interior parts
- This part is easily missed! In terms of size it will be the length of an eyelash and a little wider than the lead of a no.2 pencil.

Design a Seed

- Now that students have had the opportunity to compare different seeds at the Missouri Botanical Garden, challenge them to design their own giant seed. They can determine how the seed will be transported, then build it using classroom materials such as paper, string, paperclips, and other craft supplies. Encourage students to take their newly designed seeds outside to see how they travel.
 - Other potential learning extensions could include:
 - Designing and building other methods of seed dispersal.
 - Writing a story, comic strip or designing other audio/visual/tactical mediums that show different ways wind, water, animals, humans and seed shapes contribute to seed dispersal.



how do seeds travel?

<https://www.youtube.com/watch?v=nJAbo-F6tO4>

javan cucumber record setting glider seed

<https://www.youtube.com/watch?v=jWTnAQtvqvQ&feature=youtu.be>



For more information, please visit www.mobot.org/schoolprograms or call the School Programs office at 314-577-5185.