

# HARVEST of the MONTH in the CLASSROOM



## DRIED BEANS

### HISTORY

Beans have been cultivated all over the world for thousands of years and are an important part of diets in cultures all over the world. Beans are in the legume family, along with clovers, vetch, peas, and alfalfa. Beans cultivated in Northern Africa and Asia (*vicia faba*) are also known as fava beans or broad beans. Beans native to Central and South America of the species *phaseolus* were first cultivated in Mexico and Chile by two groups of people around the same time over 7000 years ago. When Europeans first came to the "New World" they brought beans and grains with them.

### FUN FACTS

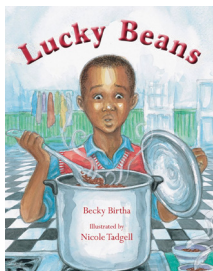
In ancient Greece, public officials were elected by dropping beans in a jar.

The world's tallest bean plant was over 45 feet tall. The largest individual pods can grow to be 5 feet long.

The top five beans grown in the United States are pinto beans, navy beans, black beans, red kidney beans and great northern beans.

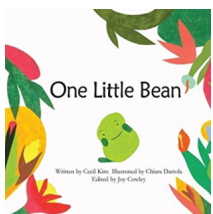
There are over 40,000 varieties of beans

### BOOK RECOMMENDATIONS



Birtha, Becky. Lucky Beans. 2010.

Like so many people during the Great Depression of the 1930s, Marshall Loman's dad has lost his job. There's little money, but there are plenty of beans-in fact, Ma cooks them for supper every single night! Becky Birtha's engaging story, based on her grandmother's memories of Depression years in the African American community, is illustrated by Nicole Tadgell's expressive paintings.



Kim, Cecil. One Little Bean. 2015.

This beautifully illustrated storybook depicts the life cycle of a bean plant. Children can learn the various stages and elements involved in the growth and reproduction of plants. Subject: Imagination - life cycle.

# THE TALLEST BEAN PLANT

Grades 3-5 • 60 minutes



**DRIED BEANS**

## OBJECTIVES

Students will plant seeds and explore which conditions affect plant growth. They will design and conduct experiments and compare and contrast to understand what variables influence the health and growth of living things.

## ESSENTIAL QUESTIONS

What do plants need for survival?  
What happens to a plant when any of its needs are limited?

## MA STATE FRAMEWORK(s)

2-LS2-3  
4-LS1-1

## MATERIALS NEEDED

4-6" pots  
Potting mix  
Pole bean seeds  
Paper & Pen or Pencil

## PROCEDURE

### Introduction

Read the article [Trowbridge School Boy Targets USA World Record for Tallest Bean Plant](#) or look up the [Guinness Book of World Records](#) tallest bean plant.

Ask students to discuss how they would go about to break that world record? What does a plant need to grow?

### Activity

#### *What factors contribute to plant growth?*

As a class, generate a list of factors that plants need to stay alive. Label it "What Plants Need." (If students are stuck, support them with suggestions of water, light, temperature, space, nutrients, etc.) Next to each factor, ask students to predict what specific conditions they think might result in the tallest bean plants. Ask students how they might set up an experiment that would allow them to explore which conditions would help them to grow the tallest bean plant.

Create groups and ask each group to develop an experiment that will use one of the factors (light, water, temperature, nutrients, etc.). To test predictions, have each group of students design an experiment, lasting up to four weeks. If needed, give students an example of an experiment such as: "We think if we use a warming mat under our plant, our plant will grow very tall because plants need warmth to grow." Have each group decide how they'll gather their data.

Have each group share their ideas for peer questions and review with the class. Each group should share why they predict their experiment will prove to grow the tallest bean. Make time in class for students to measure and graph the daily growth rate of their plant. They can also make predictions on how tall their plant will be by the end of the allotted experiment time.

After weeks of experimenting based on growth, have students write a summary and reflect on their findings. All the groups can share data on a class chart, and as a class you can explore:

- Which plant was the tallest?
- Were their things that the tallest or shortest plants had in common?
- Which plants look the healthiest?
- What conditions are ideal for good bean growth?

*Lesson Adapted from  
Massachusetts Agriculture in the Classroom*

# THE TALLEST BEAN PLANT

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## EXTENSION ACTIVITY

Replant beans harvested from your stalks. Wait to replant seeds until pods have dried, about four weeks after the beans were ripe.

Ask students to revise their experiments. What would they do next time to grow a taller bean?

Try to break the world record for the tallest bean plant.